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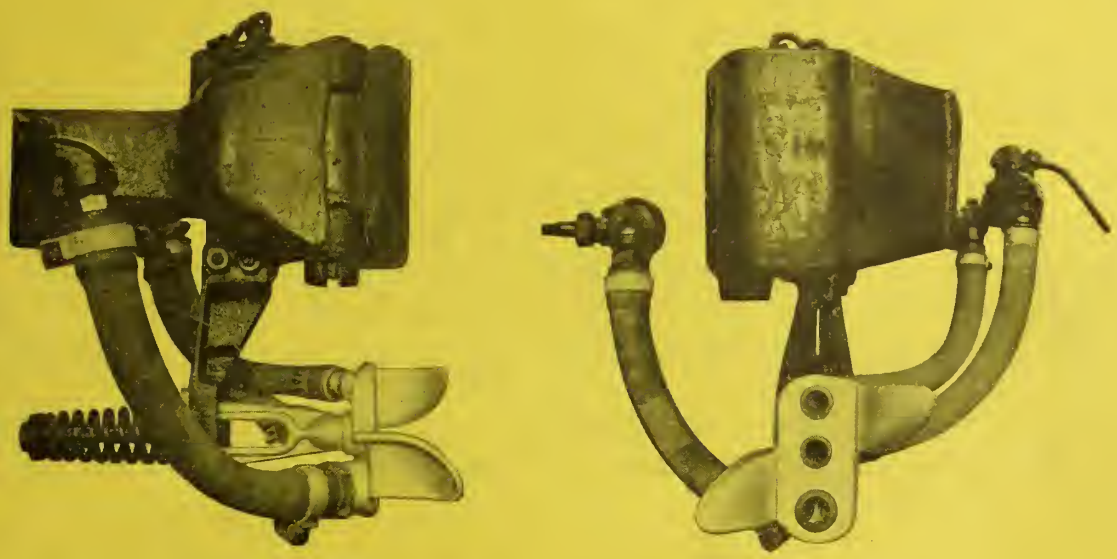

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This is not argument, persuasion or contention. It is just simply demonstrable fact.

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Montreal, Que. Winnipeg, Man.

Canada

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We have resident engineers at each of our District Offices who stand ready to give prompt and valuable service to our customers, not only in installing new apparatus, but in taking care of their troubles.

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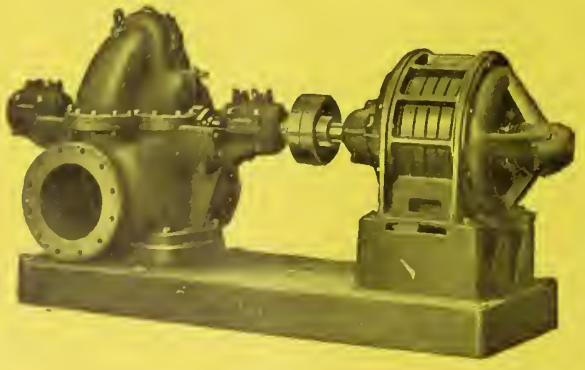

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Canadian Railway and Marine World

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1. To conder, first, the interests of the subscriber.

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3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive.

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6. To solicit subscriptions and advertising solely upon the merits of the publication.

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The International Association of Trade, Technical and Class Publications

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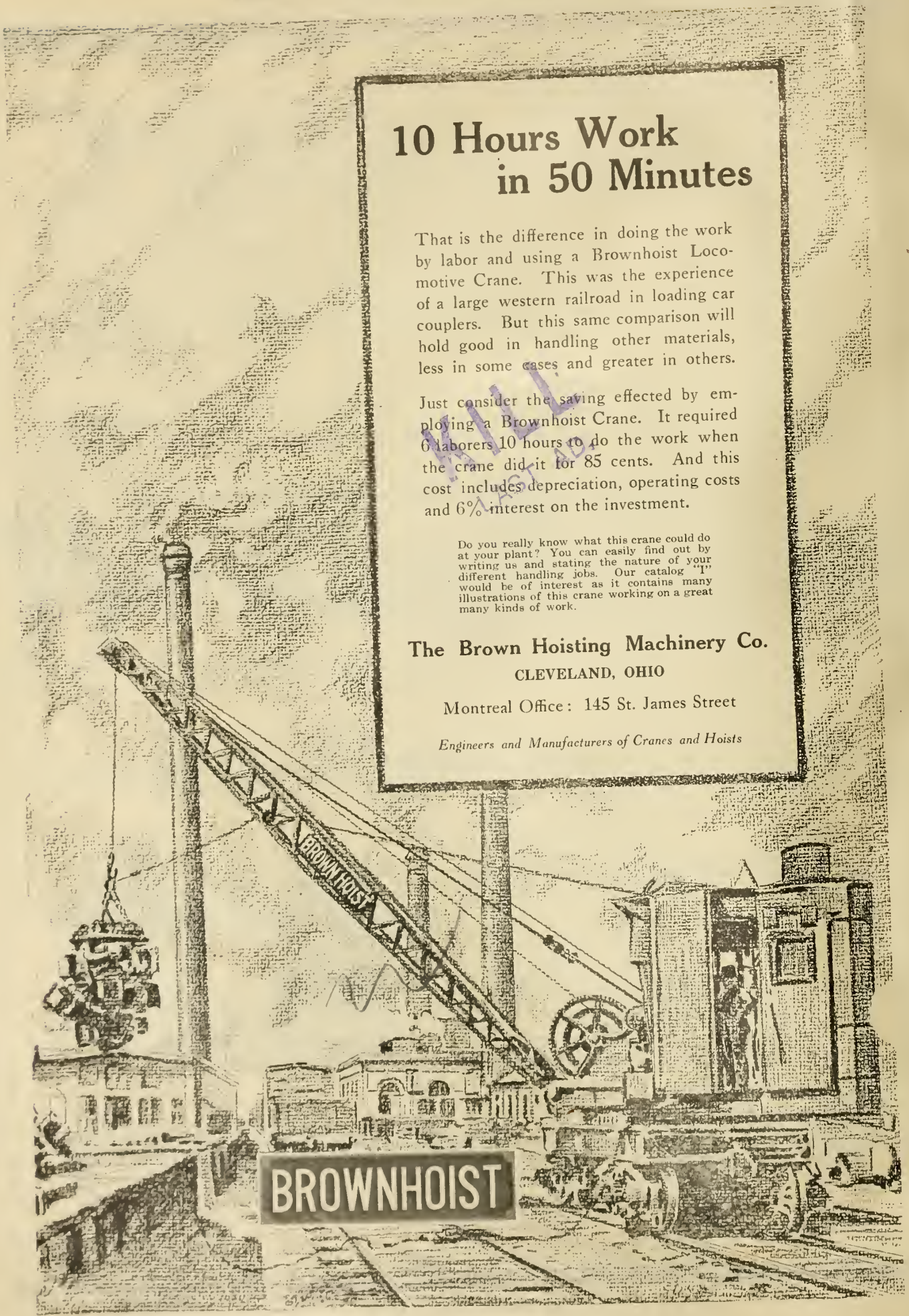

Quality Service

Courtesy in Business

* * *

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The Steel Company of Canada, Limited

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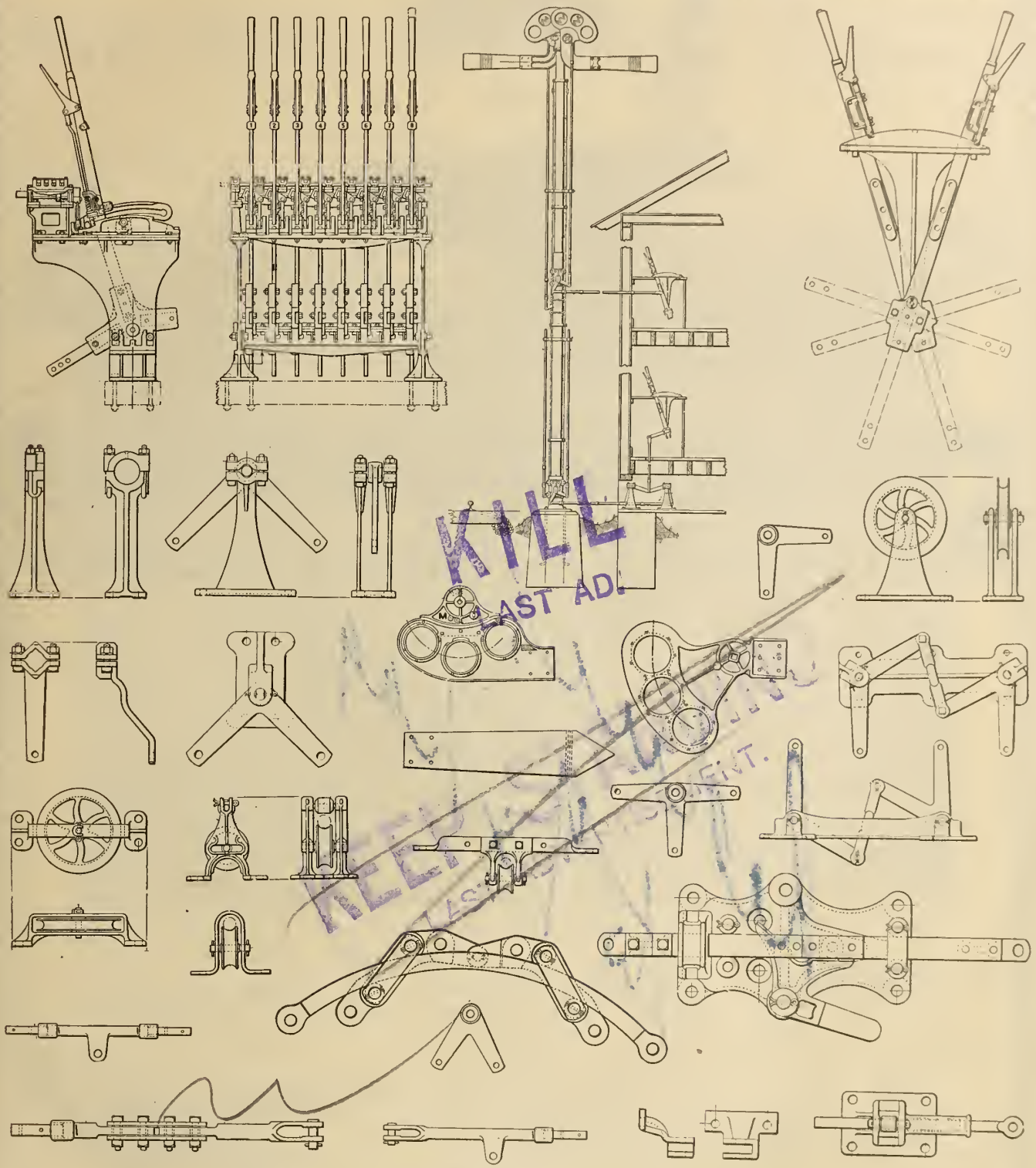

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"Safety First"

GENERAL RAILWAY SIGNAL COMPANY OF CANADA LIMITED

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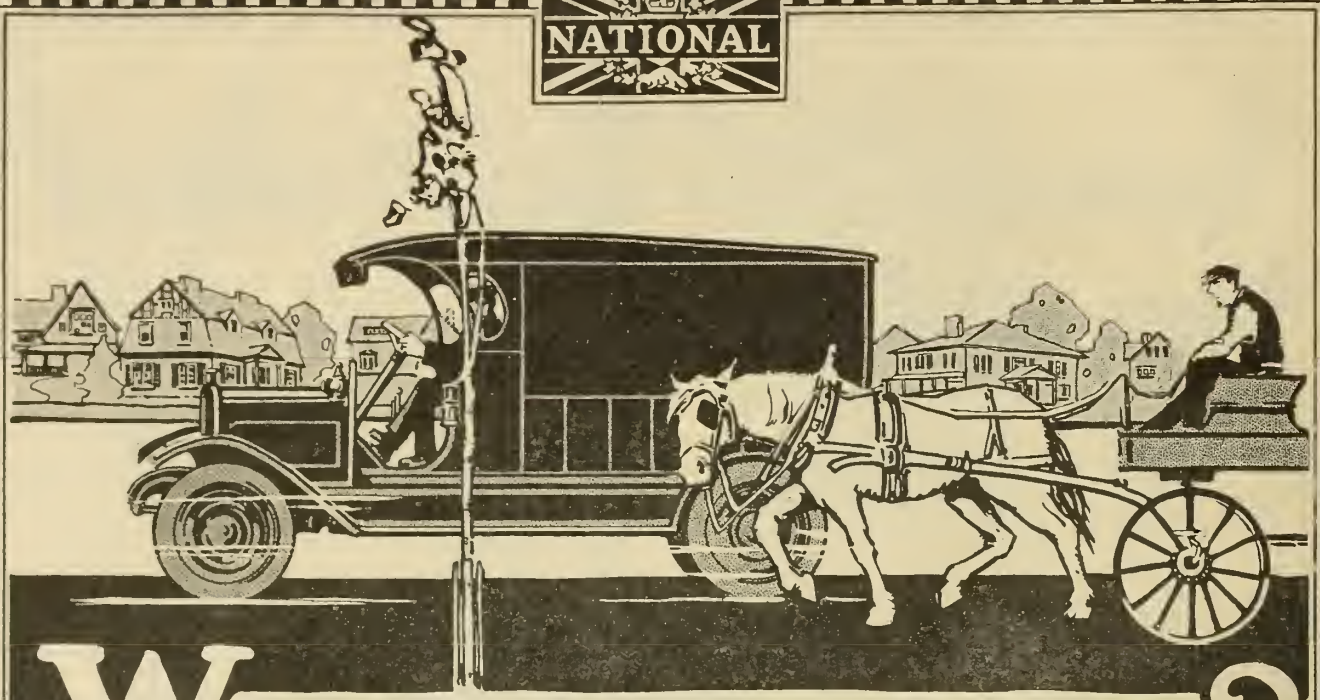
NATIONAL



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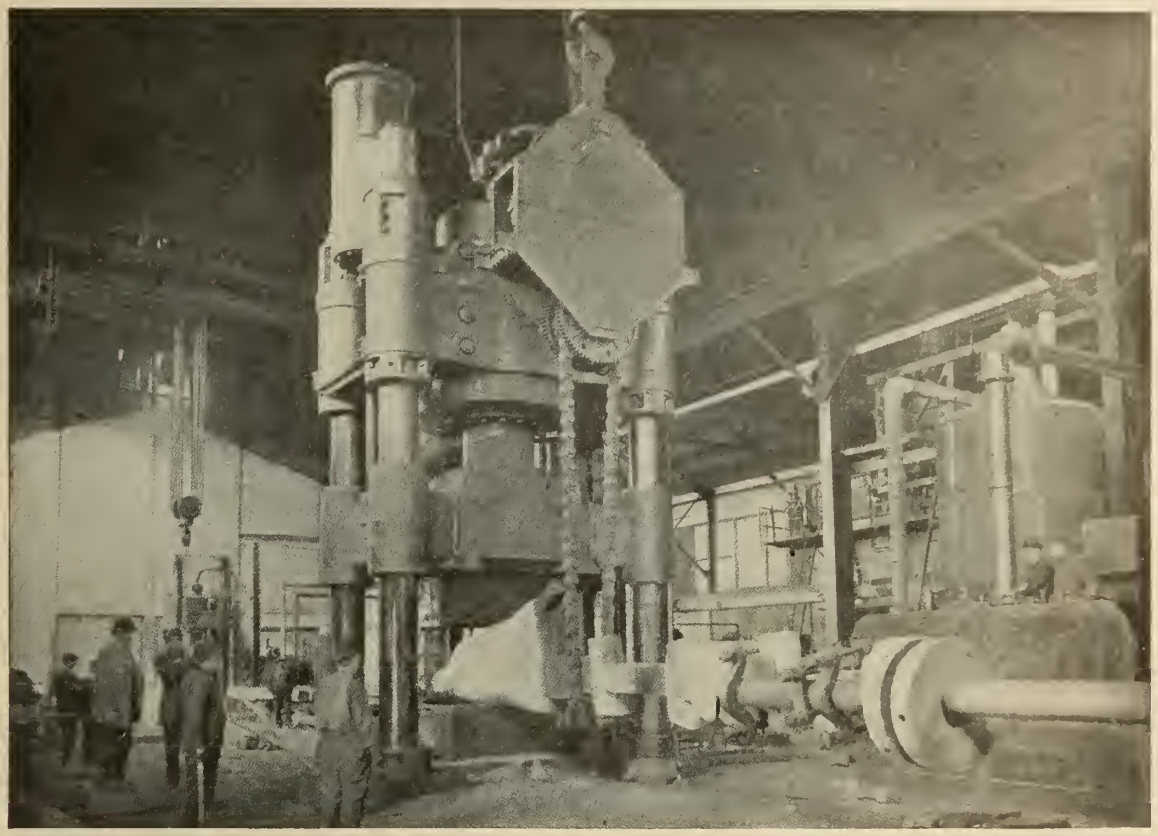

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For prices and full particulars, write to

Head Office, NEW GLASGOW, N.S.

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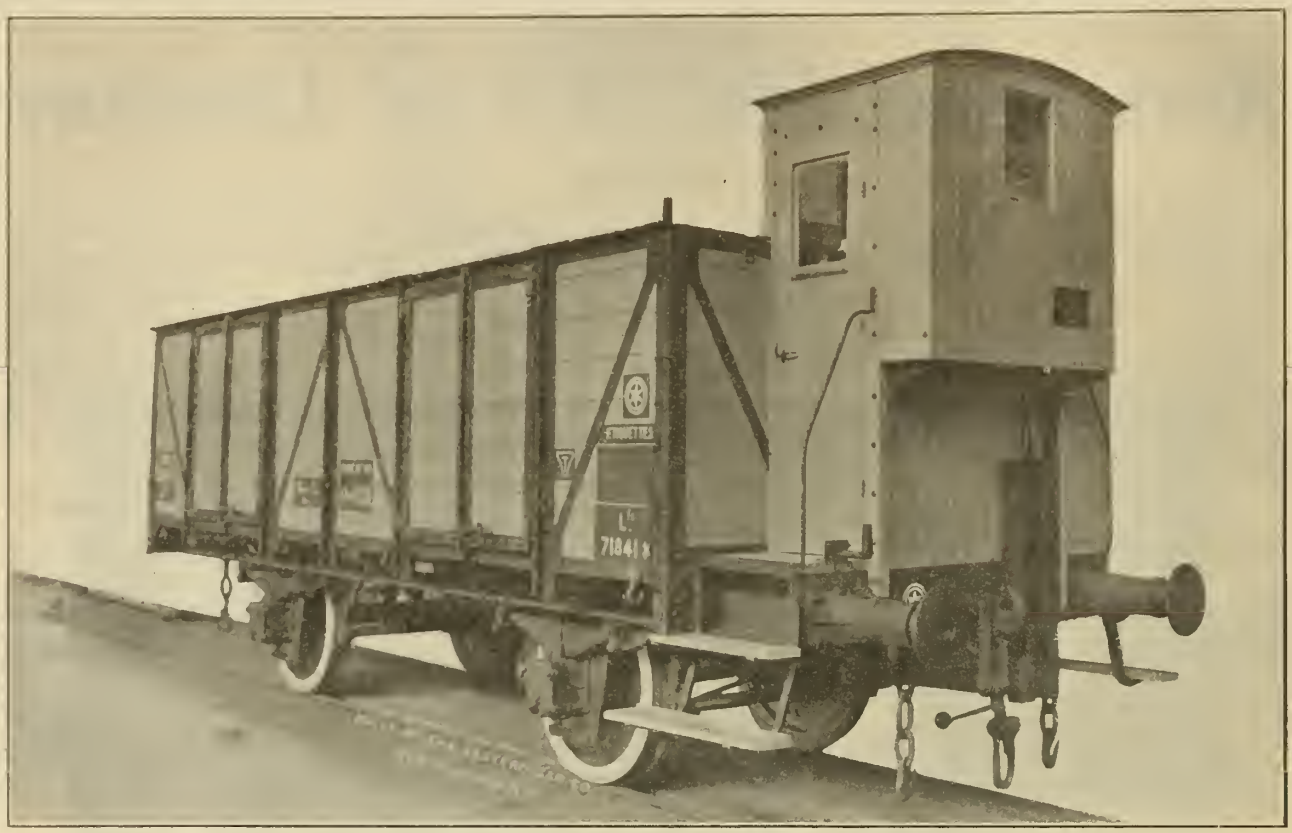

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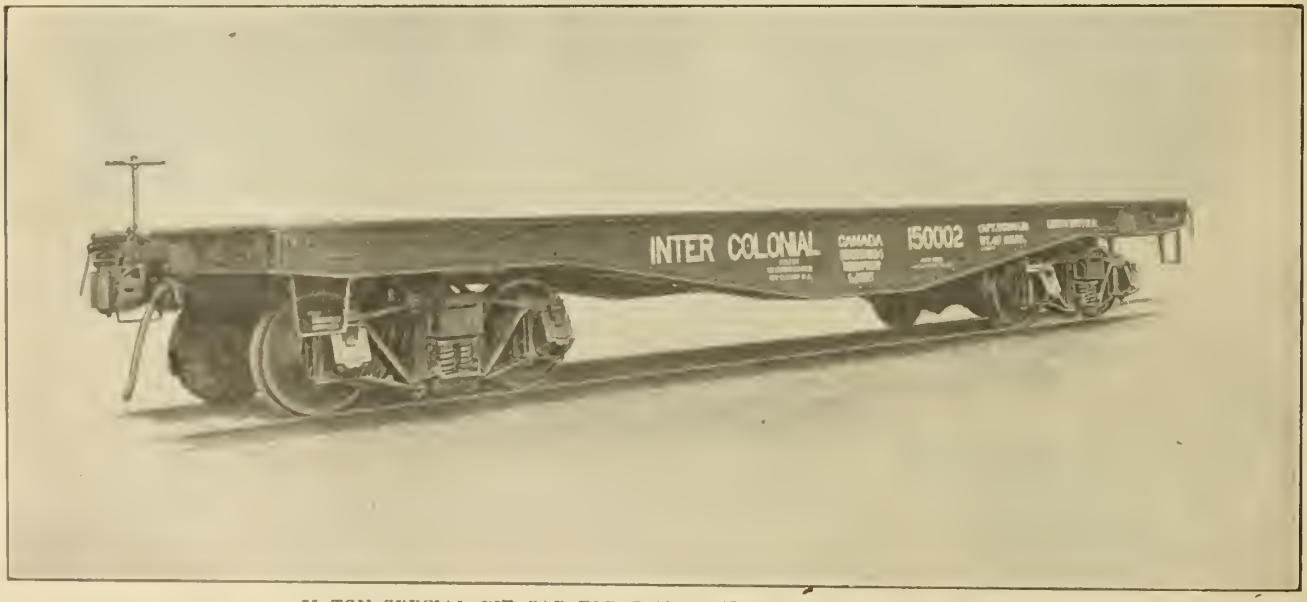

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FLAT CARS, CABOOSES, AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

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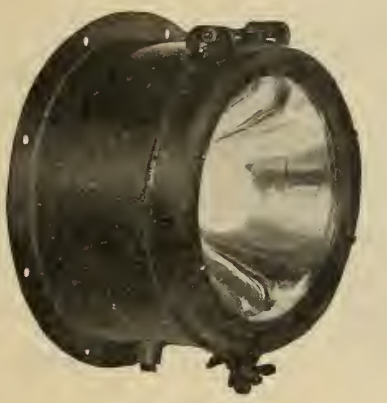
General Offices and Works, New Glasgow, N.S. Montreal Office, Room 14 Windsor Hotel

GOLDEN GLOW

These are the Famous "Golden Glow" Headlights for City and Suburban Service



Type SE-95

Type SMG-95

Type SR-95

Because "GOLDEN GLOW" Headlights are scientifically correct in principle and design.

Because they project practically all of the light from the light source, thereby requiring lamps of minimum current consumption.

Because "GOLDEN GLOW" light penetrates fog to a greater extent than that projected by any other known headlight.

Because they are non-blinding, due to the fact that their greenish-yellow glass parabolic reflectors absorb the violet and blue rays.

Because "GOLDEN GLOW" Reflectors are true parabolas, being ground, polished and mirrored by special patented machinery.

Because "GOLDEN GLOW" Reflectors will not tarnish or depreciate in value; instead they retain their polished surface and efficiency indefinitely and can be cleaned without marring their surfaces in the least.

Because these advantages can be realized only by using "GOLDEN GLOW" Headlights.

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Manufacturers

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QUALITY

It is our reputation for **Quality** that has secured for us the business of the largest **Wire Rope** users throughout Canada.

The DOMINION WIRE ROPE Co., Limited

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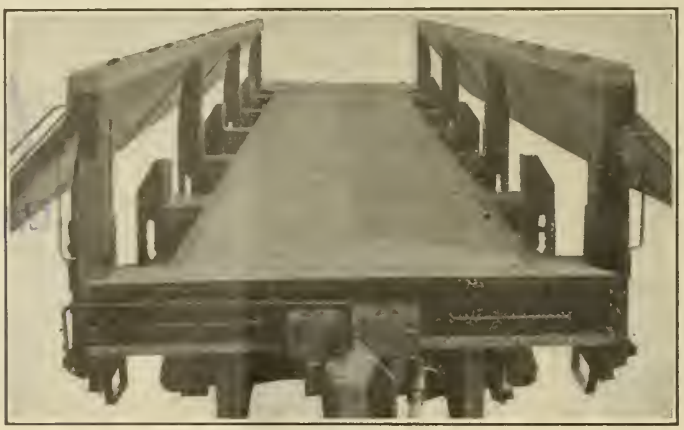
Side Ballasting With One Side Closed

The Latest in Ballast Cars

33 1/3% More Door Opening Area.

Less Stakes to Obstruct the Dumping Material.

No Clogging of the Material or Boulders between the Plow and Stakes.



Dumps Clean and Quicker in any Material.

No More Breaking of Stakes or Cables.

The Car that will give Maximum Service with Minimum Repairs.

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The HART-OTIS CAR CO., Limited, MONTREAL

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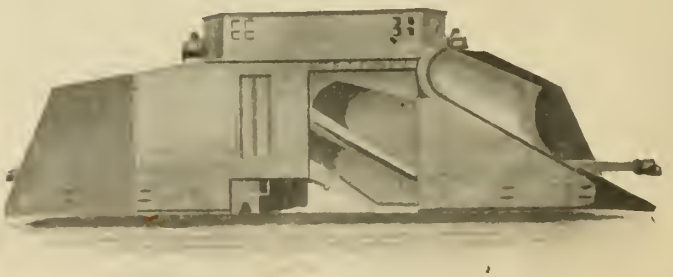
"Industrial Works" Cranes

because the owners know which is the most efficient machine.

Heavy Duty

"Snow Plows"



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Branch:
108 Mail Building
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F·H·Hopkins & Co

Head Office:
MONTREAL

CANADA

NATIONAL SERVICE

PUBLIC NOTICE is hereby given under the authority of the "War Measures Act, 1914," that during the first week in January, 1917, an inventory will be made by the Post Office Authorities, of every male between the ages of sixteen and sixty-five, residing in Canada.

National Service Cards and addressed envelopes for their return to Ottawa have been placed in the hands of all Postmasters for distribution amongst the persons required to fill in such cards. Every male person of the prescribed ages is required to fill in and return a card enclosed in an envelope within ten days of its receipt.

Any person who fails to receive a card and envelope may obtain the same upon application to the nearest Postmaster.

R. B. BENNETT,
Director General.

Ottawa, 15th December, 1916.

THE NATIONAL SERVICE CARD

1. What is your full name?..... 2. How old are you?.....years.

3. Where do you live? Province.....
4. Name of city, town, village or Post Office .....
Street..... Number.....

5. In what country were you born? .....
6. In what country was your father born? .....
7. In what country was your mother born? .....
8. Were you born a British subject?.....
9. If not, are you naturalized?.....

10. How much time have you lost in last 12 months from sickness? .....
11. Have you full use of your arms?.....
12. Of your legs?..... 13. Of your sight?.....
14. Of your hearing?.....

15. Which are you—married, single or a widower? .....
16. How many persons besides yourself do you support? .....

17. What are you working at for a living?.....
18. Whom do you work for?.....
19. Have you a trade or profession?..... 20. If so, what?.....
21. Are you working now?..... 22. If not, why?.....

23. Would you be willing to change your present work for other necessary work at the same pay during the war?.....
24. Are you willing, if your railway fare is paid, to leave where you now live, and go to some other place in Canada to do such work?.....

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Adaptable to Every Engineering Requirement

Engineers have failed to find the culvert problem that Pedlar's "Perfect" TONCAN METAL Culverts cannot meet more satisfactorily, more speedily and more economically.

PEDLAR'S "PERFECT" TONCAN METAL CULVERTS

are made of heavy gauge, deeply corrugated and heavily galvanized anti-corrosive TONCAN METAL in sizes from 8 inches to 84 inches in diameter. Also supplied in special sizes to suit any requirements. Simplify concrete work as they do away entirely with special forms.

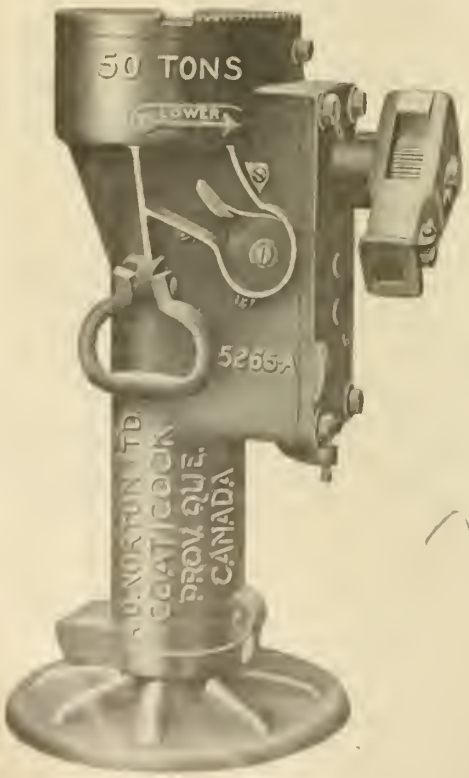
Cannot rust, rot, pit or corrode, and are unaffected by frost or climatic conditions.

The Culvert Reference Book No. 4 R.M. is full of valuable information and drainage tables. Free on request. Write today!

THE PEDLAR PEOPLE, Limited
(ESTABLISHED 1861)

Executive Office and Factories, OSHAWA, ONT.

Branches : MONTREAL OTTAWA TORONTO LONDON WINNIPEG



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10 to 100 Tons Capacity

In Stock for Immediate Shipment.

Send for Illustrated Catalogue No. 29.

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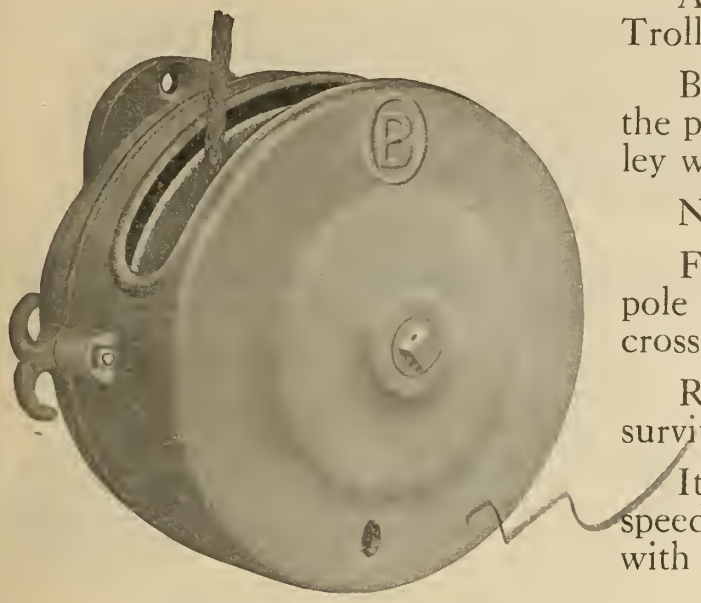


O-B Trolley Retriever

A car is speeding down grade. The Trolley wheel hits a hard spot and jumps.

Before the motorman can stop, does the pole tear down spans, break the trolley wire, tie up the whole system?

Not if the car has an O-B Retriever.

For the O-B Retriever, as soon as the pole jumps, pulls it down clear of the cross-span.

Ruggedly built, the O-B Retriever survives the most strenuous service.

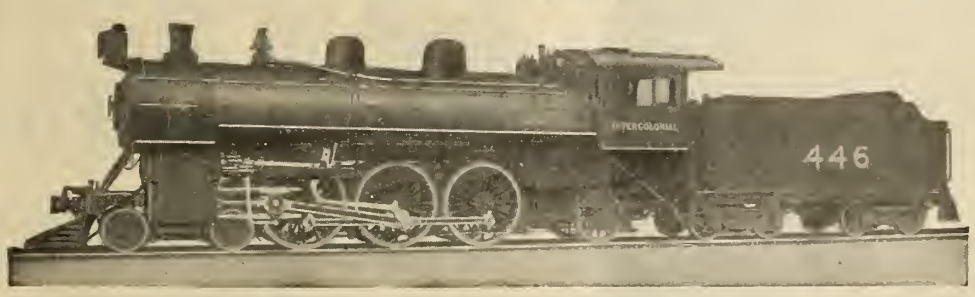
It is particularly adapted for high-speed cars. City cars should be equipped with O-B Trolley Catchers.

Send for more information.

The Ohio Brass Company

MANSFIELD, OHIO

Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE—INTERCOLONIAL RAILWAY
Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

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STAYBOLTS BREAK—when the stress of fire box expansion is too severe, and fire sheets distort and crack when staybolts are too rigidly connected to same.

THE TATE FLEXIBLE STAYBOLT—is designed and made to give satisfactory results in the final measure of its usefulness, as an economic, safe and reliable factor in reducing the costs of fire box repairs and maintenance.

ANY ARTICLE THAT CONTRIBUTES—to the service value of the locomotive as an earning factor is well worth considering carefully. From the knowledge of what has been accomplished by the use of the Tate Flexible Staybolt, we feel confident that all our patrons are well aware of its true value.

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Franklin Power Grate Shaker keeps the fires clean.

KILL
LAST AD

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Think of it! Sixteen pounds of air to satisfy a pound of coal.

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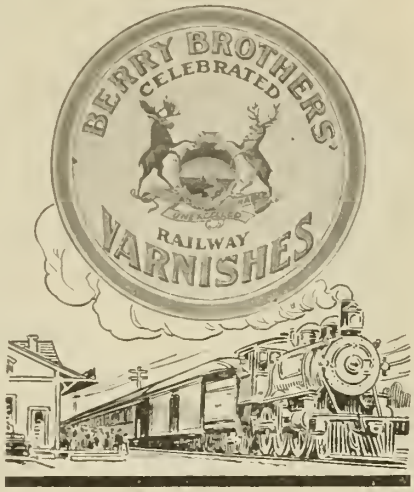

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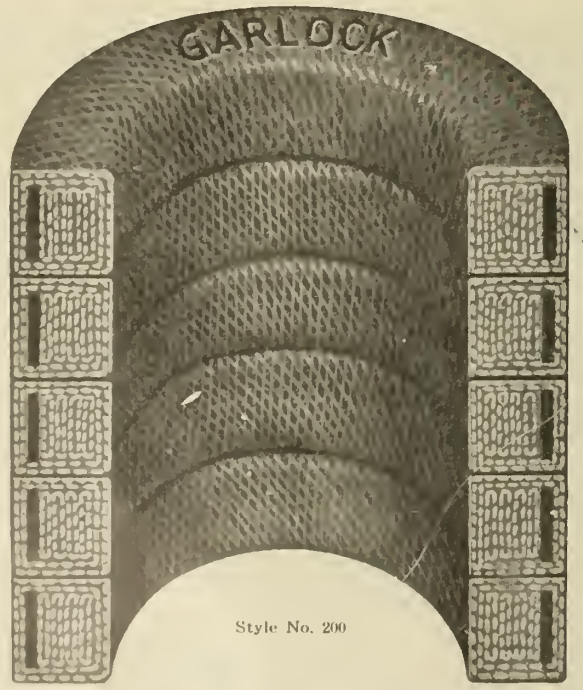

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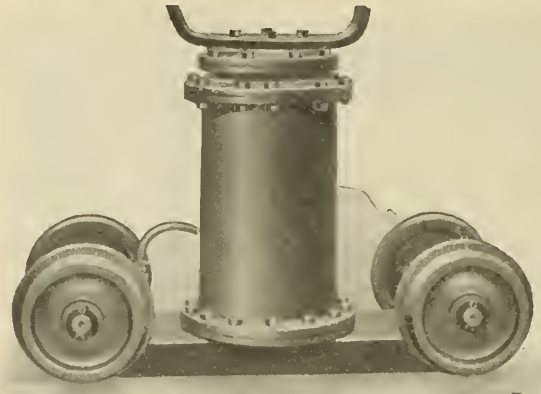

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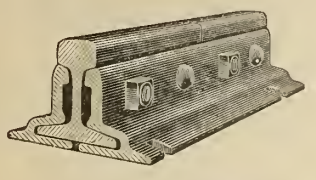

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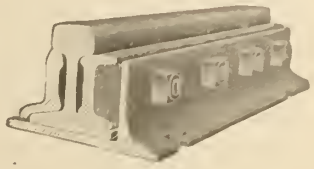

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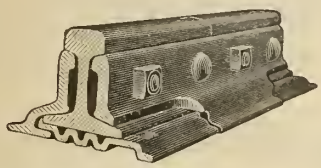

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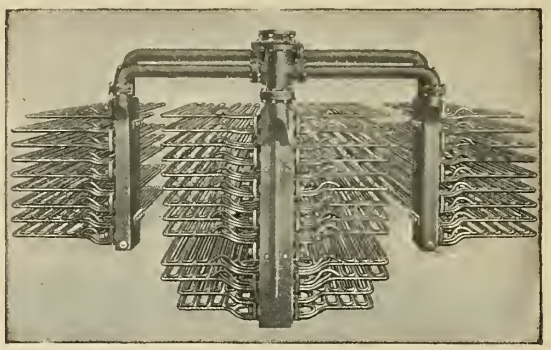

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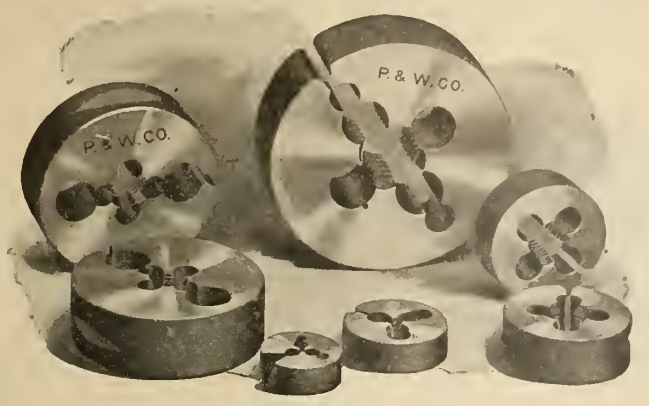

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28 SERVICE BRANCHES THROUGHOUT CANADA.

Canadian Railway and Marine World

January, 1917.

Notes on Heavy Electric Railway Traction.

By J. A. Shaw, General Electrical Engineer, Canadian Pacific Railway.

The rapid replacement of all motive power by electrical on street railways and the mushroom like growth of light interurban electric railways in the more closely settled districts of this continent has aroused a general feeling that a similar revolution will occur with steam operated railways. Conditions, however, are radically different with the latter. In the case of the former, the ability to furnish speedy units for facilitating the passenger transportation has provided a more remunerative return. In the case of the majority of steam railways, the freight service furnishes the most profitable return, and due to its inherent greatest efficiency being in the moving of large units, the application of electric power is made more difficult. However, with the growth of the country, the main problem is now becoming how to make better use of existing track facilities, especially where there is difficulty in increasing trackage in main terminals. Therefore, due to the almost unlimited power possible to concentrate for propulsion with electrical power, train speeds may be increased with consequent greater frequency of movement, and the importance of an electrical solution in relieving traffic congestion has recently been demonstrated successfully in both passenger and freight service. This also in the face of rapid advances in steam motive power design.

In addition the electrical locomotive has already demonstrated a power economy of one half that of its steam opponent, as measured for equal power at the drawbar, and is now showing even a greater improvement from the new regenerative power feature. This advantage of making use of the energy otherwise lost in stopping a train is one of the first applied solutions of a problem that inventors have worked at for a century or so, with varying success, from the old plan of stopping horse cars by winding up a spring and then starting them by setting it loose, to the recent successful plan of building elevated stations on a hill of track.

While the electrification of steam roads is primarily a railway problem, there is a closely connected aspect of material interest to the country at large, viz., the result of the use of electric power by a railway will mean the availability of cheap power for light and manufacturing purposes in communities that could not otherwise have hoped for such advantages for years. The result of this must inevitably be to stimulate both trade and population, which will react favorably to the railway company as well as the district.

From the time of Sprague's first successful railway experiment at Richmond, Virginia, in 1888, it has been the chief ambition of the electric railway engineer to invade the broad field of heavy traction, for many years practically monopolized by the steam locomotive. Material progress in this direction has marked the intervening years, but only recently has the electrification enthusiast reached the height of his ambition. The crowning achievement in the great struggle to supplant the steam locomotive has been attained in the complete electrification of the mountain divisions of the transcontinental lines of the Chicago, Milwaukee & St. Paul Ry. A brief review of some of the principal electrifications leading up to this great project may be of interest.

Baltimore & Ohio Rd.—The first undertaking of this kind which could be classed as heavy electric traction was the B. & O.R. Baltimore Terminal, which has been operated electrically since 1895. The electric zone lies entirely within the city limits and is a part of the so-called belt line extending from Camden on the west to Waverly interlocking tower on the east, 3.75 miles. There are eight tunnels in this zone, which together constitute 48% of the total distance. The longest of these tunnels is 7,300 ft. in length and extends from Camden station to Mt. Royal. Needless to say, the change to electric haulage was made to eliminate the smoke and dangerous gases in these tunnels. As a matter of fact, however, the ordinances governing the construction of certain of these tracks through the city required that they be operated electrically. The part of the zone through which trains are handled by electric locomotives is entirely up grade, averaging 0.9%, with a ruling grade of 1.5%. Trains are handled electrically only in the up grade direction, the locomotives returning light. Regular service was started with three locomotives, weighing 96 tons each, equipped with gearless motors. Four additional locomotives of the geared type were put in service in 1903, one in 1906, and 4 more in 1910 and 1912.

New York Central Rd.—The second steam road electrification and, perhaps, one of the most important in the United States, was the New York Central terminal, initial operations being started the latter part of 1906. The present electric zone includes 251 miles of track, equipped with underrunning third rail, distributed over about 53 miles of route. All through passenger trains are handled by electric locomotives within the electric zone, the change being made at Harmon on the main line, about a mile south of Croton, and at North White Plains on the Harlem Division. Suburban passenger passenger traffic is handled by multiple unit trains. As on the Baltimore & Ohio electrification, 600 volts is used on the third rail, power being generated in duplicate steam turbine stations, one located at Port Morris, on Long Island Sound, and the other at Glenwood, near Yonkers, on the river front. Each plant contains four 5,000 k.w. Curtis steam turbine generating units delivering 25-cycle, 3-phase current at 11,000 volts. This current is distributed over an 11,000 volt transmission to 9 synchronous converter substations aggregating over 40,000 k.w. In some of the earlier substations storage batteries are also used as a reserve and to take peak loads.

Operation was started with 35 115-ton electric locomotives of the gearless type, supplemented within a few years by 12 additional units of similar design. In 1913 and 1914, 16 additional locomotives of a new design were put in service. These machines are also equipped with gearless bipolar motors, but are constructed with 8 driving axles instead of 4, and the capacity is considerably greater than the original type. The last 6 locomotives, weighing 133 tons each, are probably the most powerful electric locomotives ever used in passenger service. They are capable of hauling 1,200-ton passenger trains on level track at nearly 60 m.p.h. These trains are also hauled at reduced speed up the 1.1 grades leaving the Grand Central terminal. On account of the gearless construction of the motors they operate at appreciably higher efficiency than geared designs. It has also been found that the maintenance is very low, averaging on the entire equipment during 8 years of service approximately 3½c per locomotive mile.

In order to take care of high speed express and local suburban service, multiple unit cars are employed on both the White Plains and the Harlem Division. Local service requires trains of from 2 to 11 cars, usually made up in the proportion of 2 motor cars to 1 trailer. Suburban express trains are made up of from 2 to 10 motor cars. These trains are capable of reaching a speed of over 50 m.p.h. and are very flexible in terminal operation, since they can be run in either directions with equal facility. There are now in service 192 motor cars and a number of trailers, each having a seating capacity of 64 passengers. These cars are equipped with type M Sprague G. E. control and 2 G.E.-69-200 h.p. motors. They are of all steel construction, 60 ft. long, and weigh approximately 57 tons completely equipped. Repair shops are maintained at Harmon and at North White Plains, where both locomotives and multiple unit cars are inspected and repaired. The electrical equipment in this terminal service has shown remarkable reliability, there being very few interruptions whatever to traffic from electrical causes. No interruptions whatever to traffic have occurred from power station troubles during eight years of operation.

New York, New Haven & Hartford Rd.—The well known installation which this railway carried out shortly after that of the New York Central now consists of a total mileage of 500, and includes 61 miles of 4-track and 5 miles of 6-track right of way. There are 100 passenger, freight and switching locomotives and 69 multiple unit cars in service, which relieved 150 steam locomotives. The power service was formerly supplied from a single power house, but is now supplemented by a purchased supply from one of the New York power companies at the easterly end of zone. Certain of the pas-

senger locomotives average 500 miles daily, and are in continuous service 24 hours daily for 30 days. In the case of switching locomotives, a large number are now used in the yards, 4 electric units having been found to displace 6 freight switchers, principaly on account of the fact that the electric switchers can be used almost continually with no lay-over periods. The equipment on this railway was made more complicated than on any other electrified railway, due to the fact that apparatus was required to operate from alternating current on the main system and from direct current supply when within the New York terminal zone. Probably more information has been obtained in guiding electrical engineers on the design of electric railway equipment for heavy service through the work carried out on this railway than in any other similar project, and the electrical profession is under a heavy debt to the New Haven Company in this opportunity, as otherwise progress would have been greatly retarded without this undertaking.

West Shore Rd.—Shortly after the New York Central terminal electrification was completed, an electrification project was undertaken by the West Shore Rd., a subsidiary of the New York Central system. On account of the parallel trolley lines it became necessary for this road, operating between Utica and Syracuse, N.Y., to increase the capacity of the road and to develop a high speed passenger traffic over the portion of its tracks between these two cities. The electrified section of the road is double tracked throughout, and a third and fourth track are provided at some points to enable steam trains to pass the multiple unit trains. The distance between terminals is 44 miles, with a total mileage on a single track basis of 106 miles. Formerly, only 2 steam passenger trains were run daily in each direction and at night 2 trains of sleepers passed over the tracks. With these tracks electrified there are fast limited cars hourly from each terminal, local cars or trains once an hour from each terminal and also a fast freight service which is still hauled by steam locomotives.

The electrified division is equipped throughout with an underrunning third rail similar to that used on the New York Central terminal electrification, current being fed from synchronous converter substations at 600 volts. Power is received by 4 substations from the Adirondack Electric Power Corporation at 60,000 volts. Each substation contains 2 synchronous converters of 300 k.w. capacity, each with reserve space for an additional unit. The rolling stock equipment includes 19 4-motor multiple unit cars, which are operated either singly or in trains as the traffic requires. With the third rail construction used this line has never been seriously handicapped by snow. Interruptions to the service from all causes have been practically negligible and the traffic of the system has shown a steady growth.

West Jersey & Seashore Rd.—One of the earlier railways to take advantage of electrification as a means of increasing facilities for handling passenger traffic was the West Jersey & Seashore Division of the Pennsylvania System, extending from Camden to Atlantic City, 65 miles, and a branch from Newfield to Millville, 10 miles. The contract for the entire equipment of this railway, including installation and the equipment, was placed in service in a little over five months, which is a remarkable record, considering the fact that included in this work were the erection of a power station, 8 substations and the electrical equipment of over 150 miles of single track, the building of 71 miles of high tension transmission in duplicate and the equipment of 68 multiple unit cars. The line from Camden to Atlantic City is double tracked throughout and at points there are three tracks. With the exception of a short stretch of track near Camden, the entire road is equipped with an overrunning third rail operating at 600 volts and taking power from the synchronous converter substations. Multiple unit equipment is operated in trains of from 3 to 10 cars without trailers. The express service between terminals operates on a headway of 15 minutes in each direction at speeds up to 60 m.p.h. Frequent local service is also provided for Camden suburbs and on the branch line to Millville.

Electricity is generated in a steam turbine station at Westville, generating 6,600 volts, 3-phase, which is stepped up to 33,000 volts for transmission. At the substations this voltage is stepped down and delivered from the synchronous converters at 650 volts to the third rail. The power station equipment consists of 3-2,000 k.w. Curtis turbo-generators with the necessary auxiliary units. Each of the substations is equipped with 2 750-k.w. synchronous converters with space for an additional unit. The present rolling stock equipment consists of 109 motor cars, some of which are constructed for combination baggage and smoking cars, and others for mail cars. Each is equipped with 2 200 h.p. motors and type M automatic control. The standard passenger cars have a weight of about 45 tons and a seating capacity of 58 persons.

The operation of this electrified steam road has been most satisfactory in every way. The number of delays chargeable to electrical equipment has been less than 6% of the total number of train minutes detention, and the increase in traffic gained by the use of multiple unit cars instead of steam trains enabled the railroad to make a remarkable increase in the number of passengers carried, on account of the local service furnished to the smaller towns and the high speed express service between terminals.

Great Northern Ry.—One of the most unique electrifications in the country, and the only road to use 3-phase equipment, is the Cascade tunnel on the G.N.R., near the summit of the Cascade Mountains. Wash. This tunnel is 2.65 miles long and has a uniform grade of 1.7%. In the yards at each end are grades of 2.2%, on which all trains must be started. Under steam operation this tunnel had become the limiting feature of the road. Heavy freight trains, requiring from 2 to 4 of the heaviest locomotives, could not operate trains faster than from 7 to 8 miles an hour. In the tunnel operation was still more difficult. The smoke and steam coated the rails with damp, greasy soot, causing the wheels to slip, and the smoke and gases made operation positively dangerous to train crews.

The electrification involved about 4 miles of route with 6 miles of single track, including sidings. Power is generated in a 5,000 k.w. hydro electric plant at Leavenworth, transmitting 3-phase, 25-cycle current at 33,000 volts for about 30 miles. The contact system consists of double trolley construction carrying 3-phase, 6,600 volts a.c., using the rail and ground return for the third conductor. These overhead wires are spaced about 8 ft. apart in the tunnel and 5 ft. apart in the yards. Ordinary pole trolleys are used for collecting the current.

There are 4 electric locomotives weighing 115 tons each, all of which is on the driving axles. Three-phase induction motors are connected by twin gears to each axle and the trucks are adequately equalized to take care of twisting strains. These motors are of the 3-phase induction type, wound for a primary voltage of 500, the rotors being equipped with wound secondaries brought out through collector rings. There are 13 steps in the resistance used in connection with the rotor, allowing for ample speed control. The average freight train hauled weighs approximately 2,000 tons, including both steam and electric locomotives. On down grades the induction motors automatically return power to the system when the train exceeds the normal speed of about 15.5 m.p.h. The Great Northern has the distinction of being the first railway electrification in America to use regenerative braking, this feature having been in very successful operation for more than six years. The Norfolk & Western has begun using the same principle recently, and the Chicago, Milwaukee & St. Paul has adopted direct current regeneration.

This installation was made in July, 1909, and since that time all traffic through the tunnel has been handled by the electric locomotives, with the exception of delays due to avalanches and snow slides, some of which have interrupted traffic for several days at a time. On March 1, 1910, an avalanche came down the mountain through the yards near the tunnel carrying all the cars of two trains, with 2 steam and 3 electric locomotives, down into the bottom of the canyon, from 200 to 400 ft. away. The electric locomotives were untouched for about three weeks during the task of clearing the line. They were then taken to the railway company's shops and put in operating condition. The average cost of repairs, including labor and materials on the 3 locomotives, was $962 each, while the expense of similar repairs on the 2 steam locomotives was $1,284 each.

The Grand Trunk Ry., in May, 1908, electrified the St. Clair Tunnel and replaced 4 steam locomotives of 100 tons with 6 66-ton electric units, which, as a rule, are used in sets of two. During the period that these electric units have been in service no failure has occurred in the main motors, and they have been available for service throughout 90% of the time. The average annual cost for the maintenance of the 4 steam locomotives was $21,173, while that for the 6 electrical locomotives has been $11,131. The average cost per car handled through the tunnel, a distance of approximately 5 miles, by steam locomotives, was 26c, against 17.2c by electrical locomotive, although the capacity of cars handled today is much greater than the capacity of those of 1907 and 1908. The cost of fuel for the steam locomotives was $42,000 a year, whereas the average cost of fuel consumed for generating energy for the electric locomotives is $17,000 a year. This difference in cost is partly due to the fact that slack coal is now used, whereas hard coal was used for the steam locomotives. Power is supplied from one plant, containing 2 1,500 h.p. turbo-generator sets, and stokers of boilers are so arranged that their operation is practically controlled automatically from the operation of locomotives on the main line.

Michigan Central Rd.—One of the most successful electrifications of a trunk line steam railroad is the section of the

M.C.R. operating under the Detroit River. The 2 track tunnel connecting the M.C.R. lines terminating at Windsor, Ont., and those in the United States terminating at Detroit, was completed in 1910, and since that time all trains have been hauled by electric locomotives through the tunnel, instead of being ferried across the river. Under the old method it required about 30 minutes to make the crossing and the facilities were very limited. With the tunnel trains pass through in less than 6 minutes, and the capacity of the tracks is limited only by the length of train which can be handled. The general scheme of electrification includes the purchase of 3-phase, 60-cycle energy at 4,400 volts from the Detroit Edison Co., and transformation in the company's substation to 650 volts d.c. At this voltage current is fed to the locomotives through an underrunning protected third rail reaching all of the electrified tracks.

The substation is located near the Detroit end of the tunnel, and contains 2 1,000 k.w. synchronous motor generator sets, with auxiliary equipment for excitation and for controlling a 312 cell storage battery (capacity 630 amps. for 8 hours, and momentary discharges up to 11,000 amps.). The control equipment is so arranged as to reduce the peak loads and thus obtain a practically constant load at unity power factor. The original equipment consisted of 6 electric locomotives designed for hauling both freight and passenger cars through the tunnel and also for switching service in the yards. Each is equipped with 4 railway motors and weighs 200,000 lbs., all of which is on driving axles. The service consists of hauling an 1,800-ton trailing train from one yard to the other, negotiating a 2% grade when 2 locomotives are operated multiple unit. The second order of locomotives placed in service in 1914 consisted of 4 similar units, each weighing 240,000 lbs. The total electrified trackage now in operation is approximately 24 miles, including yards on both sides of the river and the two track tunnel.

Norfolk & Western Ry.—The electrification of 30 miles of this road was the solution of the problems to double the capacity of a hilly section with a tunnel. The limit in capacity by the use of the heaviest steam power had been reached, and continual delays were being met with through the severe starting difficulties on grades, the latter condition arising partially through necessary stops for coal or water. Twelve electric locomotives have displaced 33 Mallet locomotives, and have increased the average speed up the ruling 2.4% grade from 6 to 14 miles an hour. The principle of braking by regenerating power has proved a complete success on this railway. The fact that the speed on down grades is constant and inflexible prevents the possibility of surges in the train which would result in broken drawbars. The main electrical feature in this electrification was the application of the polyphase induction type of motor to locomotive axles, and the use of a converter on each locomotive, so as to permit operation by single phase alternating current, and thus permit of the advantages of a single trolley wire. Trains are operated with one locomotive hauling and a pusher on the heavier grades. The method of starting is for the locomotive man on the head locomotive to release brakes and let the slack run back. As soon as the locomotive man on the pusher feels the resulting blow, he applies power and holds the train until the front man gets under way. This method is due to the two men not being able to signal due to curves and train length and works out very satisfactorily.

The Southern Pacific Co.'s suburban lines in the immediate vicinity of San Francisco were changed over from steam to electric operation in 1911. The electrified district includes the Oakland, Alameda & Berkeley Divisions, which carry the heavy suburban traffic from the ferries to the residential districts.

Power is generated for this system in an oil burning steam station located at Fruitvale, the generating units consisting of two 5,500 k.w. turbo-generator sets delivering 3-phase, 25-cycles. Power is transmitted at 13,200 volts to 2 outlying substations, the third being located in the power house. Each of the substations is equipped with two unit synchronous converter sets operating two in series for 1,200 volts. Each of these sets is of 1,500 k.w. capacity, there being in all 10 double units in the 3 substations.

The rolling stock equipment consists of 81 all steel multiple unit cars, each equipped with four 145 h.p. 600/1200-volt motors. Trains of from 2 to 12 cars, made up of motor cars and trailers, are operated, depending upon the demands of the traffic. The contact system is of a flexible type built for the use of pantagraph trolleys.

The Pennsylvania Rd., in addition to the direct current third rail electrification of its New York entrance has electrified recently suburban lines operating out of the Philadelphia Broad St. station. This station, when completed in 1881, contained 8 tracks and handled 160 trains a day, with 18 trains in the rush hour. In 1910 tracks had been increased to 16 and trains to 574, with 53 in the rush hour. Electrification has given relief by reducing the train movements, averaging from 4 to 15 down to 2. This was achieved by the use of 93 motor cars. Up to the present, trains of these cars are only running on one division, but this will be increased shortly. It is found that, due to the higher rate of acceleration possible, these trains can be more quickly despatched, thus reducing running time considerably. Each car has 2/225 h.p. motors and an 8 car train is found to draw 6,800 h.p. when accelerating. The fluctuations in power demand for present service varies from 27,000 h.p. to zero, averaging 8,000 h.p. per hour during the rush period. The power demand in this service is, therefore, not only considerable, but very fluctuating. Power service is purchased from the Philadelphia Electric Co.

The Butte, Anaconda & Pacific Ry., which began electrical operation in 1913, is in many ways one of the most remarkable examples of electric train haulage in America. While previous examples of steam road electrification have been equipped for various reasons, either tunnel and terminal operation or for high speed suburban service, this road was electrified purely for reasons of economy. The results of this change over have amply justified the initial cost of the electrification, a comparison of operating results during the first 6 months of electrification showing a saving of an amount equal to 20% of the initial cost, not allowing any salvage for steam engines released.

The electrified tracks consist of 30 miles of route between the mines at Butte and the smelters at Anaconda and about 114 miles on a single track basis. Power is purchased from the Montana Power Co.'s system at 2,300 volts, 60 cycles, and is transformed by motor generator sets to 2,400 volts direct current for use on the trolley. There are two substations, one at Butte and the other at Anaconda, both of these being installed in the power company's existing transformer stations. The initial rolling stock included 15 freight and 2 passenger locomotives and 8 additional locomotives have since been puchased to take care of the heavy increase in traffic.

The freight traffic consists largely of transfer of copper ore, and at present amounts to more than 6,000,000 tons a year. This material is handled in steel ore cars, having a capacity of about 50 tons each. The weight of train hauled over the main line, including a 0.3 grade, frequently reaches 5,000 tons trailing. Eight passenger trains a day are operated between Butte and Anaconda, each consisting of from 3 to 5 passenger and baggage cars. The overhead construction on this system is made especially flexible by the use of loop hangers which allow the contact wire to rise without lifting the weight of the messenger. There also may be other novel features in the switching yards and at street railway crossings.

The eminently successful operation of this initial 2,400 volt railway was largely influential in the Chicago, Milwaukee & St. Paul Ry.'s decision to electrify its mountain divisions at 3,000 volts direct current.

The Chicago, Milwaukee & St. Paul Ry. electrification differs from all previous projects of this kind in that the transcontinental lines involved embrace 4 complete locomotive divisions as operated by steam locomotives. None of the existing electrifications on trunk line railways, either in America or in Europe, have included more than one engine division. For this reason there has been no opportunity for interchange of spare locomotives and no possibility of materially reducing the number of spare steam locomotives required for the operation of the system.

The Missoula and Rocky Mountain divisions include 440 miles of route, embracing approximately 650 miles of single track lying between Harlowton, Montana, on the east, and Avery, Idaho, on the west. This road is one of the main transcontinental highways of the country and the divisions being electrified contain the most serious grades encountered on the C. M. & St. P. between Chicago and the coast. Under steam operation these 4 divisions required 103 steam locomotives of the heaviest types, and even with this number the schedule was maintained with difficulty. In the winter when temperatures range as low as 40 to 50 below zero, it is extremely difficult to keep steam locomotives in operation. It is no uncommon occurrence to find several locomotives stalled during cold weather, with fires drawn and water removed from the boiler, owing to the freezing of some of the piping which is exposed to the weather. Furthermore, it has been found that after hauling a train over a 112 mile division for about three days in succession it is necessary to put the locomotive into the shops for a day's overhauling.

The electrical equipment for this electrification includes 42 main line passenger and freight locomotives and 2 switchers, and experience with electric locomotives on the first two divisions seems to indicate that these locomotives will be amply sufficient to take care of the present traffic and normal increase within the next few years. In addition, it is probable that trains will be operated much more nearly on schedule time and with less damage to equipment owing to accidents. In the operation of the first division it

has been found that 1 electric is capable of easily replacing 3 steam locomotives and possibly 4, when other divisions are put in operation. The reasons for the much greater capacity of the electric locomotive per unit are: first, ability to operate a large per cent. of the 24 hours with minor inspections; and, second, ability to haul equivalent trains at approximately double the speed of the steam locomotives. Many other advantages may be mentioned which tend to increase the capability of the electric locomotive as compared with the steam. Not the least of these is the regenerative braking feature which relieves the brakes of a large portion of the wear and heating due to holding heavy trains on severe grades.

The 440 miles of route involved in this electrification will be fed from 14 substations located at points averaging 33 miles apart, each station receiving power from the Montana Power Co.'s system at 100,000 volts and transforming to 2,300 volts for synchronous motor generator sets. These sets are of the three unit type, consisting of a synchronous motor and two 1,500 volt d.c. generators connected permanently in series to deliver 3,000 volts to the trolley. Each station contains either 2 or 3 of these sets, there being a total of 32 sets in the 14 substations. Two small generators, one on each end of the set, furnish exciting current for the main fields of the generators and for the revolving field of the motor. The substation equipment is so arranged that in case the regenerated power sent back by the locomotives exceeds that being used nearby, the motor generator sets will operate inverted and thus return excess energy to the transmission system and thence to other substations requiring power. Measuring instruments are arranged to credit the amount of this returned energy to the railway company. Each of the substations is in charge of 3 operators working on 8-hour shifts, and these men are at all times under the direction of the train and power dispatcher, who gives instructions for the operation of the station. Two model bungalows have been built by the railway company at each station for housing the operators.

As above mentioned, electric power is received at 100,000 volts, 60 cycles, from the Montana Power Co.'s transmission network, operating numerous hydro electric plants in various parts of the state. The largest of these stations are located at Great Falls and Thompson's Falls. In order to ensure power supply at all times there are several feeding-in points, and the railway company maintains a separate 100,000 volt transmission line the entire length of the electrification. One of the most completely equipped hydro electric plants on this system is the Volta plant, in the Great Falls of the Missouri River. This station at present contains four 10,000 k.w. vertical generators and two additional units are being installed. The available head at this point in the Missouri River is 155 ft., and the supply of water at all times is ample.

The main line locomotives, a number of which are now in service, have a total weight of 228 tons, with 224 tons on the driving axles. The cab consists of 2 similar sections extending practically the full length of the locomotive. The freight and passenger locomotives are similar in all respects, except that passenger locomotives are provided with a gear ratio permitting the operation of 800 ton trailing trains at approximately 60 m.p.h., and are furthermore equipped with oil-fired steam boilers for heating the trailing cars. Each locomotive carries 8 430 h.p. motors, each geared to a driving axle with twin gears. These motors are designed to operate at 1,500 volts per commutator, 2 motors being permanently connected in series across the 3,000 volt circuit. The tractive effort available for starting trains is approximately 135,000 lbs. at 30% co-efficient of adhesion, and the continuous tractive effort of the freight locomotives is 71,000 lbs. In addition to the eight driving wheels, each half of the locomotive carries a 2-axle guiding truck which supports approximately 30 tons weight. The motors are ventilated by a forced draught from a blower, which is driven from the control motor generator set located in the locomotive cab.

The control equipment is the type arranged for multiple unit operation. This allows two locomotives to be operated from a single controller. The main control switches are located in steel compartments inside the cab, convenient for inspection and repairs. Current for operating contactors, lights and other auxiliary apparatus is taken from a 3,000/125 volt motor generator set, one of which is located in each half of the locomotive. Compressed air for the air brakes, whistles, pantagraph trolleys and other auxiliaries is supplied by a 3,000 volt, 2-stage air compressor having a piston displacement of 150 cu. ft. of free air a minute against a pressure of 135 lb. Current is collected from 2 pantagraphs, 1 located at each end of the locomotive.

One of the most distinctive features of this electrification is the regenerative braking on the locomotives, which permits the return of energy to the system on descending grades instead of checking the speed of the train by means of the air brakes. The amount of braking is directly under the locomotive man's control and the air brakes are relieved of practically all service except when bringing the train to a final stop. It should be understood that when braking a train by the regenerative method, there is no overheating as is the case with air brakes, and consequently there is a material reduction in the wear on brake shoes, tires and rails. In addition to this the air brakes will always be in good condition when required for emergency service and delays due to excessive wear will be greatly reduced. In actual practice it has been found that a large portion of the power regenerated by trains on descending grades is used up by other trains taking power on the level or on ascending grades. In some cases when there is no train available for absorbing the excess energy the power is taken up by one or more substations and returned to the transmission system connecting the several substations.

The overhead construction consists of two 4/0 trolley wires flexibly suspended from a steel catenary supported on wooden poles. Bracket construction is used wherever the track alignment will permit and cross span on the sharper curves and in the switching yards. The 2 wires are suspended side by side from the same catenary by independent loop hangers alternately connected to each trolley wire. This type of construction permits the collection of the very heavy currents by reason of the twin contact on the pantagraph with the 2 trolley wires, and also ensures sparkless collection under the extremes of either heavy current or more moderate current at high speeds. A 500,000 c.m. feeder parallels the track for about 80% of the 440 miles, being used on all grades up to and including 1%. On heavier grades a 1,000,000 c.m. feeder is used. A 4/0 negative feeder or ground wire is carried on top of the poles.

During the early part of Dec., 1915, an interesting comparative exhibition was staged by the C. M. & St. P. R. to show prominent officials the comparative capabilities of steam and electric locomotives. The observation party was stationed at Janney substation, on the western slope of the Rocky Mountains, and about midway on the 1.66% ascending grade. The first train sent up the hill was hauled by one of the 282-ton electric locomotives, assisted by a similar unit acting as a pusher. The train consisted of 48 cars weighing approximately 3,000 tons trailing and negotiated the grade very easily at about 16 m.p.h. Following this was a second train hauled by 2 mikado type steam locomotives and one Mallet steam pusher. The steam train consisted of 37 cars, weighing about 2,200 tons, and difficulty was encountered in making the grade at a speed of from 9 to 10 m.p.h Upon completion of the test, President Earling indicated his entire approval of the electrical equipment and gave instructions for putting it into regular service immediately.

It may be safely concluded that there are important economical and expedient reasons why the number of electrifications will continue to increase rapidly and especially in our own country with its numerous water powers, the ever increasing cost of coal and growth of population.

Wellsville & Buffalo Rd. Corporation.—This railway, which runs between Buffalo and Wellsville, N.Y., which was operated as a portion of the Buffalo & Susquehanna Ry., and which was placed under separate management about the commencement of last year, is to be abandoned. The present intention is to discontinue the freight and passenger service, scrap the rolling stock, rails and equipment, and sell the right of way. It is stated that since its separate operation, it has been run at a loss of $45,000. It was operated by receivers for a time, also at a loss, and it was proposed to electrify it in an effort to make it pay. The officers are:—C. A. Finnegan, President; T. Hofeller, Vice President; A. Weber, Vice President; F. C. Schumaker, Auditor and Car Accountant; E. Joyce, Treasurer; I. P. Spining, General Freight and Passenger Agent; C. T. Tewkesbury, General Agent, Traffic Department, and C. J. McDonald, Soliciting Freight Agent.

Passenger Meetings at Quebec. The Niagara Frontier Summer Rate Committee's rate representatives will meet Jan. 9 and 10, at 9 a.m. for compilation of fares, etc. The committee's annual meeting will be held Jan. 11 at 10.30 a.m. The International Water Lines Passenger Association will meet on Jan. 10 at 4 p.m. The Great Lakes & St. Lawrence River Rate Committee will meet on Jan. 11, immediately following the adjournment of the Niagara Frontier Summer Rate Committee meeting. All the meetings will be at the Chateau Frontenac.

The Roy Elevator-Milling Co., Ltd. has been incorporated under the Dominion Companies Act, with $100,000 authorized capital, and office at Fort William, Ont., to build, own and operate a hospital and a mill elevator and to carry on a general grain handling business, and to own and operate steam and other vessels, and to carry on a general navigation business. M. C. King, O. Sabourin, F. P. Germain and C. M. Dickinson, Fort William, are the incorporators.

Discipline, Theoretical and Practical.

By H. E. Haanel, Trainmaster, C.P.R., Regina, Sask.

Your grandfather can remember when they beheaded people for pocket picking, horse stealing and over two hundred other offences against society. Now capital punishment is lawful for but one crime, and we may live to see it abolished altogether. Perhaps your grandfather can also remember when train employes, regardless of record, were dismissed from the service on the slightest provocation. It has since been realized that this was a prodigal waste of resources that take time and money to produce. Since "it costs five thousand dollars to make an engineer," for instance, is it not economically wiser to pursue, if possible, a process for his correction, reformation and education, than to discard him for uncertain raw material should he fail to measure up to requirements? Many men are swayed by a multitude of pernicious mental and physical influences and affections, and their normal conception of rational performance is intermittently distorted because of unfortunate, albeit remediable idiosyncracies and tendencies. But, as Fouilee expresses it, "Man is a machine that thinks and has ideas for springs. Each thought is a force. The thought of future punishment is a force as truly as any other idea, and is, per se, no less fatal or less powerful. It may counteract other forces in the mind of man. Hence punishment may be threatened and used as a means of efficacious influence upon action. The fear of punishment will tend to cause a man to avoid the act with which the idea of punishment is associated." Since any carelessness or negligence, however small, in the business of transporting passengers and freight is so pregnant with dire consequences, this salutary fear of punishment must, by some method, be constantly induced to keep the individual attuned to the exacting nature of his work. Hence the raison d'etre of railway discipline.

Modern discipline is a growth. Fines that were imposed in the early days as punishments, and which were deducted from offenders' pay cheques, were superseded gradually by suspensions and consequent loss of pay for periods commensurate with the seriousness of the offence. One day Geo. R. Brown, General Superintendent of the Fall Brook Rd., began to think seriously about the hardship to innocent members of an offender's family through loss of income that resulted from such disciplinary methods. He was well aware of the regrettable moral lapses often accompanying periods of enforced idleness, and so it was that finally, from his efforts to obviate these objectionable features, the system of "Discipline by Record" was evolved. It is now often referred to as the "Brown System," and the demerit mark has received the familiar epithet of "Brownie," although meriting and demeriting are among certain modifications the system has since undergone. Each road employing this system of discipline has introduced some original variations applicable to its own peculiar requirements, but the essentials differ little. The accumulation of a stipulated number of demerit marks automatically causes dismissal. The number of demerits is doubled for the repetition of any offence, while the deletion of a set number of marks automatically occurs with the fulfilment of a certain continuous period of service free from discipline. In changing from the old suspension system to the system of discipline by record, one of the southern roads gave the following as some of the leading objects of the change:—

"To avoid that incorrect and pernicious feeling on the part of the employe who has been actually suspended, and thus lost money in wages, that he has paid the company for the loss and trouble he has caused and can settle again in the same manner.

"To encourage and stimulate all employes to co-operate with the officers of the company in all matters tending to produce harmony, safety and efficiency, and thereby secure better service resulting both in profit and credit to the company and to its employes, as well as increased satisfaction to the public. Each employe can work with the knowledge that the excellence of his record, the prospect of his continued employment, his promotion and final success depend on his own good conduct and exertions. By both good and faithful work he can accumulate a stock of credits that will practicaly insure him against dismissal in case of some oversight or error that otherwise would deprive him of employment. The most efficient men will be encouraged, developed, benefited and retained, while those who prove to be unfit for the railway service, though dismissed, will feel they have been dealt with fairly and justly.

"To enable the employe to gain in purse, in self respect, in manliness, in interest in his work, in permanence of employment, in loyalty to the company, and in solicitude for its interests; by which the company expects to gain a man more contented, more intelligent, more courteous, more watchful and zealous for its interests, realizing that they are practicaly his own, thus securing a more harmonious, economical and efficient service in which the element of force is not predominant."

While such acts as disloyalty, dishonesty, desertion, intemperance, insubordination, wilful neglect, gross carelessness, immorality, etc., subject the offender to summary dismissal, dismissal is also the only possible recourse in cases of serious consequence regardless of the degree of error. A man is morally as much a murderer when he shoots to kill but misses, as when his shot hits and kills, but the law provides varying penalties according to the results. Similarly, consequences govern the punishment to a certain extent of the employe, and, although he is morally as culpable for laxity in flagging when nothing occurs as when the result is a collision, he is demerited in the first case, but in the second case is dismissed, not only because a strong deterrent example is imperative, but also because public opinion would not acquiesce in any half way measures being taken with wrong doing of direct public concern.

Rewards in recognition of meritorious acts have always been accepted as an efficient complement of punishment. Hume argues that "all laws being founded on rewards and punishments, it is supposed, as a fundamental principle, that these motives have a regular and uniform influence on the mind, and both produce the good and prevent the evil actions." When offenders were punished by fines, commendable acts were rewarded by monetary gifts. Now that the demerit mark is the punishment, the reward is the merit mark. To reward consistently requires hardly less care than to punish judiciously. Some consider it good procedure to recognize by merit marks mere acts of duty such as discovering broken arch bars, fallen brake beams, etc., on the employes' own train, as it tends to encourage a more assiduous examination. Unless the conferring of rewards is judiciously curtailed, however, the normal, healthy conception of reasonable service might easily become warped, and rewards would lose their effect. It must be borne in mind that the effectiveness of the demerit mark varies directly with the value placed upon the merit mark.

The influence of example is a force which is being turned to account with excellent results by some roads through the agency of the educational bulletin. Seneca taught that one of the principal expectations of punishment is "that it may render other men better," while Plato tells us that punishment is inflicted not only "in order that persons punished may not again commit the fault, but that his punishment may restrain from similar acts those persons who 'witness' the punishment." Bethune is more emphatic and asserts that "example is the most important end of all." The educational bulletin, issued periodically and posted where all can study it at leisure, describes offences committed and commendable acts recognized during the period, and generally the action taken is indicated. Care is exercised to avoid any references which might identify persons or localities. The educational value of these bulletins is, of course, wholly dependent upon the degree of intelligent understanding exercised in the presentation of details. No useful impression is made on one who reads, for instance, that punishment was inflicted for "contributory negligence resulting in damage to equipment." A few pertinent facts forcefully presented would, however, start wholesome thinking and discussion. I have at hand a number of educational bulletins from different parts of the continent, and the following might be considered a fair sample of their contents:—

"Conductor, 10 demerits, failure to take prompt action which would have avoided delay to traffic.

"Brakeman, dismissed, improper flagging.

"Conductor, 10 merits, promptness in insuring proper protection of his train.

"Brakeman, 5 merits, ejecting tramps from his train."

To my mind such curt and colorless details cannot awaken interest and create any useful impression. The educative material is wholly lacking. Why not try to drive the lessons home by an expose of the facts, and bulletin these cases somewhat as follows:—

A car in a westbound train was derailed at 6 a.m. The car ran up the main track far enough for trains to pass through siding, had not the frog been damaged. Conductor reported that auxiliary was needed, and it was ordered out. Instead of taking his locomotive and going forward to section house two miles distant, getting the section men and telling them what was required to make the siding ready for passing trains, he remained at the derailment. The auxiliary had orders to pick up the section men who were found surfacing the track about 8 a.m. When section men arrived at the derailment they had to return to the tool house for necessary material and tools to make the repairs. It was about five hours after the derailment before trains could pass. Had the conductor taken his locomotive and gone immediately for section men, the track could have been made ready in about one and a half hours. This was an exhibition of negligence or very poor judgment on the part of the conductor and he has been demerited.

A train stopped on main track in an obscure place on account of locomotive breaking down. Conductor at once directed flagman to go back to protect train, going forward himself to ascertain cause of trouble, after which he started to look after flagman, thinking he might not get back far enough. Although the flagman had at least five minutes start of conductor, he was overtaken about three telegraph poles from rear of train. Conductor passed flagman and succeeded in stopping a following train which could not have been stopped in time to avoid a rear collision if flagged at point where flagman was overtaken. The conductor is commended for his acton and has received merit marks. The flagman has been disciplined.

A freight brakeman found two tramps in an empty car. Though they threatened to do him bodily harm and tempted him with money to let them ride, he ejected them. His conduct in this case has been rewarded with merit marks.

A freight train stopped at a station to do some way work. Head brakeman, unknown to locomotive man or fireman, was cutting off locomotive. He leaned over the drawheads, resting his body on them to reach angle cock on other side. Rear brakeman, not knowing what head brakeman was doing, gave back-up signal to cut train near rear. Locomotive slacked back and body of head brakeman was caught between deadwoods and he was almost instantly killed. Had he walked around the locomotive to get on proper side to turn the cock, or had he climbed over the drawheads, or even under them, as good practice required, he would not have been injured. This opportunity is taken to again impress on trainmen the danger of recklessness, carelessness or undue haste in doing their work. The company does not ask or expect you to take any unnecessary risks of life or limb in the performance of your duties. You are directed to take ample time to do your work safely.

I have placed the last case in my pattern bulletin to indicate that there are occurrences which teach valuable lessons, besides those in connection with which discipline is inflicted. The educational bulletin should only include such cases as are of distinct educational value, whereas the bulletins I have before me are little else than clerical statements of demerits distributed during the period, and as such have an effect more injurious than otherwise. Why show the number of credits and debits at all? Do not such details simply afford opportunity for unreasonable comparisons, suggesting discrimination, when we know that discipline is not something that can be done up in certain sized parcels and delivered to all alike, because of the endless variation of attendant circumstances and conditions? The successful disciplinarian spends much thought on the diagnosis of each case. He must, among other things, consider temperament and disposition, interpret impulses and analyze motives. He knows this medicine of discipline must be dispensed according to the individual needs. A conscientious man, with a sensitive disposition, will often lose heart and become sour and petulant if given an overdose. One of the supercilious, bombastic variety, always convinced of his own perpetual immunity from all disorders, goes into convulsions from the slightest dose, and stridently threatens revenge. Some never even begin to show signs of life until the pill box is nearly empty, while others, perfectly indifferent to their condition, are only mildly amused when told they have but an hour to live. The large majority, however, providing their cases have been properly diagnosed, respond to the tonic effect of the treatments prescribed, and by their exemplary efforts to avoid relapses, create a wholesome atmosphere in which the weak and backward find enthusiasm and vigor.

Even the cleverest disciplinarian might confound motives and attribute a certain result to a wholly irrelevant or non-existent cause. It is, of course, better that no discipline be given than to apply it without ample justification. The most elementary instinct of man is to oppose injustice, and the imposition of unwarranted punishment gnaws like a canker-worm and infects a whole organization. Snap decisions, "soak-it-to-him" predilections and other such slapstick curiosities are perhaps gone forever, but the scar they made is plainly visible in the present attitude of organized labor. It is now perfectly safe in the majority of cases, to leave the correction of his men to the head of the department, and the discipline he imposes, with the concurrence of his superintendent, is usually just. But, because of the inherent tendency of some officers to settle cases by personally bombarding the guilty ones with noisy invective, or because of a desire to insure impartiality, or, if you please, to avoid any element of personal spleen, some roads have instituted a court, of which the superintendent is presiding judge and his official staff the the jury. At the weekly sittings the judge submits all cases that have arisen wherein the question of discipline is outstanding. Facts are weighed and details discussed, and the discipline that is finally given must be the result of an unanimous decision. This method fosters a spirit of confidence among the employes, and fosters, also, a more impressive sense of the gravity of misdeeds. Discipline given by such a body is unalterable. Too often that imposed by the individual is not, and nothing is more inimical to the efficiency of punishment, or more demoralizing in its effect upon the attitude of the men towards the officers, than for a committee of the men to establish the injustice of an officer's decision and compel the withdrawal of any discipline resulting from it.

In referring to the deterrent principle, Dr. McConnell says:—"It aims to punish, and through punishment to instruct, and through instruction to restrain." Only in so far as punishment points out more clearly and emphatically the narrow pathway of infallible procedure is it constructive. The idea should be to inculcate the wrongdoer directly, and by example all others in similar work, with a mental impulse which will thenceforth act as a positive deterrent under similar circumstances. A punishment that fails to create the distinct mental impression that will ever afterwards make the particular error concerned more real and serious, has, through insincerity or lack of severity, failed fundamentally. Of course, regardless of what the effect may be, each punishment brings the offender that much nearer to automatic dismissal, by reason of his accumulating record, but it must be remembered that to make it possible for a man to so perform that he can retain his position, is the highest concern of discipline. Any influence which will weaken or nullify the corrective effect of punishment should be strongly combatted, and yet such influences unfortunately emanate continually from some of the very officers who apply the punishment. By sharp criticism, relentless pressure, and unfair comparisons, men are oftentimes provoked into taking chances and violating safety regulations in order to perform with the promptness and cheapness that meet the required standard of merit set by an over zealous officer. Under such conditions, punishment for exceeding the speed limit, for failing to clear superior trains by the full time margin, etc., is hardly likely to be received in the proper spirit. Safety first lectures and dictums are but sounding brass, and efficiency tests merest inconsistency to a man whose superior officers are not themselves, in precept and example, invariable and constant regarding the principles involved.

In its modern application, discipline, as has been suggested, is prospective rather than retrospective. In other words, its highest economical mission is to mould the future rather than requite the past. From the ethical standpoint, it is not a species of expiation or retaliation, but is inflicted solely to educate and constrain, and such education and constraint of the collectivity, as well as the individual, will be attained and profitable results accrue only—

1. If wrongdoing is sharply defined and invariably recognized as wrongdoing under any and all circumstances.
2. If discipline is justifiable, commensurate and inevitable.
3. If meritable acts are sufficiently elevated above those of plain duty—and
4. If the educative information is properly promulgated.

Saskatoon Stock Yards.—The Saskatoon, Sask., Board of Trade has completed arrangements with the railway companies entering the city to erect stockyards there next spring. Provision is made that the city may acquire the yards whenever a bylaw is passed by the ratepayers and the sanction of the Provincial Local Government Board is obtained for that purpose.

The Canadian Pacific Railway's Roll of Honor.

LIST 15

Abbey, Samuel	Timekeeper	Kamloops	Wounded
Bedinfield, Sydney C.	Waiter	Vancouver	Killed in action
Betts, Thomas A.	Porter	Pt. McNicoll	Killed in action
Booth, Arthur	Agent	Two Creeks	Wounded
Brown, Isaac G.	Machine helper	Winnipeg	Wounded
Chapman, Andrew G.	Stower	Winnipeg	Wounded
Charrel, Alexander R.	Clerk	Montreal	Killed in action
Cosgrove, James	Conductor	Calgary	Wounded
Daly, Joseph	Clerk	Montreal	Died of wounds
Donald, Ernest	Storeman	Angus	Wounded
Fisher, Harry	Night porter	Winnipeg	Wounded
Forsyth, William	Wiper	Brandon	Wounded
Fuller, Percy D.	Clerk	Montreal	Wounded
Luxton, Wesley	Machine apprentice	North Bay	Wounded
Macdonald, Kennth M.	Watchman	Gimli	Suffering from shock
Mathison, Albert	Craneman	B.C. Dist.	Wounded
Morgan, Cyril W.	Brakeman	Moose Jaw	Wounded
Nash, Harry B.	Clerk	Victoria	Wounded
Parsons, William	Constable	Cranbrook	Wounded
Paterson, Wilfred	Timekeeper	Red Deer	Wounded
Smith, Cecil H.	Tool grinder	Ogden	Wounded
Smith, George	Constable	Calgary	Killed in action
Squires, William G.	Boilermaker's helper	Toronto	Killed in action
Stewart, James H.	Locomotive fireman	Moose Jaw	Wounded
Stone, Edward W.	Machinist's apprentice	Ogden	Wounded
Swanson, John	Locomotive fireman	Cranbrook	Suffering from shock
Thrower, Leonard	Yardman	Fort William	Wounded
Twist, John	Laborer	Finmark	Died of wounds
Wellspring, William	Locomotive fireman	Nelson	Wounded
Wilson, Frank R.	Yardman	Calgary	Died of wounds
Willins, Henry J.	Car repairer	Toronto	Killed in action

Gondola Cars for the Paris and Orleans Railway.

Fifteen hundred 20-metric ton, 4-wheel, high sided gondola cars, and 500 sets of steel work are being shipped from Montreal to France for the Paris and Orleans Ry. Their general dimensions are as follows:

Length over buffers	7,672 m.m.
" end sills	6,500 m.m.
Wheel base	3,050 m.m.
Length inside	6,420 m.m.
Width over all	2,808 m.m.
" inside	2,530 m.m.
" c. to c. of buffers	1,740 m.m.
Height of sides above floors	1,457 m.m.
Door opening	1,342 m.m.

They have a light structural steel underframe, steel side frame, and end frame with wood lining, being of the regular continental type. They rest on two axles, through the medium of laminated elliptic bearing springs, with link connection to brackets on side sills. The springs rest on malleable iron journal boxes, which are made in two pieces. The top and bottom parts are fastened together by two bolts, making the box oil tight. The inside of the box and also the surfaces of the journal bearing are machined to gauge, in order that the brass will fit perfectly. The journal bearing is made of a composition of copper, tin, and zinc and has a hard white metal lining about ⅝ in. thick, composed principally of tin and antimony. No journal wedge is used. An oiling pad of the European style is placed in the bottom of the box, to lubricate the journal.

The wheels are 1040 m/m in diameter, with cast steel centres and rolled steel tires secured by Gibson rings. The cars are equipped with forged steel drawhooks cast steel buffers with springs, forged screw couplings and safety chains. The screw couplings are made from high carbon steel, and are heat treated, so as to have a tensile strength of approximately 100,000 lb. per sq. in. A certain percentage of all drawhooks, couplings and safety chains are tested to destruction and must stand a specified load before failing. Test specimens are also cut from these forgings and pulled, in order to get the percentage of elongation of the steel in the finished forging.

Each car is equipped with four pairs of side doors, having steel framing, and lined with wood. There is a hinged tarpaulin rod running full length of car, to support a tarpaulin cover when one is used. The brake arrangement is of the hand lever type, the brake being applied from the ground and operates on one wheel only. The manufacture of all fittings is required to be perfect in all respects. The sides, ends and doors were all built in jigs so as to ensure absolute interchangeability. This is essential on account of the difficulties in re-erecting the cars in France.

They have been built by Canadian Car and Foundry Co., Ltd.

Gondola Car for the Paris and Orleans Railway.

Birthdays of Transportation Men in January.

Many happy returns of the day to:—

J. Abrams, Wharf Freight Agent, C.P.R., Vancouver, B.C., born at Manchester, Eng., Jan. 24, 1870.

W. U. Appleton, General Master Mechanic, Canadian Government Railways, Moncton, N.B., born there, Jan. 29, 1878.

R. Armstrong, Superintendent, Souris Division, Manitoba District, C.P.R., Souris, born at Kingston, Ont., Jan. 27, 1865.

F. X. Belanger, General Freight and Passenger Agent, Temiscouata Ry., Riviere du Loup, Que., born at Chlorydormes, Que., Jan. 20, 1876.

G. McL. Brown, European Manager, C.P.R., London, Eng., born at Hamilton, Ont., Jan. 20, 1866.

R. F. Chapman, dispatcher, C.P.R. Brandon, Man., born at Coal Branch, N.B., Jan. 21, 1874.

C. A. Cotterell, Superintendent, Lethbridge Division, Alberta District, C.P.R., Lethbridge, born at Enden, Eng., Jan. 18, 1877.

W. A. Cowan, A.M.Can.Soc.C.E., acting General Superintendent, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., born at Galt, Ont., Jan. 22, 1877.

J. E. Dalrymple, Vice President, G.T.R., G.T.P.R., and Central Vermont Ry., Montreal, born there Jan. 1, 1869.

A. Davidson, General Agent Grand Trunk Pacific Ry., Prince Rupert, B.C., born at St. Henri, Montreal, Jan. 29, 1885.

G. J. Desbarats, C.M.G., Deputy Minister of Naval Service, Ottawa, Ont., born at Quebec, Que., Jan. 27, 1861.

J. E. Everell, Superintendent Montmorency Division, Quebec Ry., Light and Power Co., Quebec, and District Passenger Agent, Canadian Government Railways, Montreal, born at Cap Rouge, Que., Jan. 1, 1863.

Gordon Grant, Chief Engineer, National Transcontinental Ry., Ottawa, born at Dufftown, Scotland, Jan. 2, 1861.

G. F. Hichborn, formerly Agent, Great Eastern Fast Freight Line, New York, born at Boston, Mass., Jan. 13, 1875.

C. Hood, Local Freight Agent, C.P.R., Saskatoon, Sask., born at Edinburgh, Scotland, Jan. 20, 1864.

D. W. Houston, Superintendent, Regina Municipal Ry., Regina, Sask., born at Bathurst, N.B., Jan. 3, 1879.

Carl Howe, Manager, New York Central Fast Freight Lines, Chicago, Ill., born at Berrien Springs, Mich., Jan. 11, 1870.

H. J. Humphrey, Superintendent, Farnham Division, Quebec District, C.P.R., Farnham, born at Berrys Mills, N.B., Jan. 26, 1879.

W. C. Hunter, Assistant Superintendent Shell Shops, Nova Scotia Steel and Coal Co., New Glasgow, N.S., ex-Manager New Brunswick Coal and Ry. Co., born at St. John, N.B., Jan. 4, 1865.

H. G. Kelley, Vice President, G.T.R. Montreal, born at Philadelphia, Pa., Jan. 12, 1858.

John Macrae, Locomotive Foreman, C. P.R., North Bend, B.C., born at Springburn, Glasgow, Scotland, Jan. 30, 1879.

P. A. Macdonald, Manitoba Public Utilities Commissioner, Winnipeg, born at Gananoque, Ont., Jan. 6, 1857.

J. J. Nelligan, ex-Division Freight Agent, Canada Steamship Lines, Ltd., Montreal, now on active service with Canadian Expeditionary Force, born at Hamilton, Ont., Jan. 20, 1876.

G. Pepall, Assistant Foreign Freight Agent, G.T.R., and representing National Despatch-Great Eastern Line, Toronto, born at High Wycombe, Bucks., Eng., Jan. 15. 1849.

William Phillips, Canadian Representative, Cunard Steamship Co., Montreal, born at Toronto, Jan. 31, 1870.

W. Pratt, General Superintendent, Sleeping and Dining Cars and Hotels, Canadian Northern Ry., Winnipeg, born at Sibbertoft, Northamptonshire, Eng., Jan. 18, 1870.

John Pullen, President, Canadian Express Co., Montreal, born at Shepton Mallet, Eng., Jan. 23, 1863.

Ralph M. Reade, Superintendent, City and Quebec County Railways, Quebec Railway, Light & Power Co., Quebec, born at Llanelly, Wales, Jan. 1, 1868.

L. J. Rouleau, Travelling Freight Agent, G.T.R., and Agent, National Despatch-Great Eastern Line, Montreal, born there, Jan. 6, 1879.

B. G. F. Rutley, ticket agent, Canadian Northern Ry. and Grand Trunk Pacific Ry., Fort Garry Union Station, Winnipeg, born at Chatham, Ont., Jan. 25, 1879.

C. Senay, Assistant Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal, born at St. Cesaire, Que., Jan. 31, 1873.

A. F. Stewart, M.Can.Soc.C.E., Chief Engineer Eastern Lines, Canadian Northern Ry., Toronto, born at West Bay, N.S., Jan. 1864.

J. G. Sullivan, M.Can.Soc.C.E., Chief Engineer, Western Lines, C.P.R., Winnineg, born at Bushnell's Basin, N.Y., Jan. 11, 1863.

Ross Thompson, ex-Chief Engineer and Managing Director, St. John and Quebec Ry., Fredericton, N.B., born at Newry, Ireland, Jan. 1, 1865.

T. H. White, Chief Engineer, Canadian Northern Pacific Ry., Vancouver, born at St. Thomas, Ont., Jan. 27, 1848.

A. Wilcox, General Superintendent, Central Division, Canadian Northern Ry., Winnipeg, born at Kincardine, Ont., Jan. 2, 1865.

Alberta Board of Public Utility Commissioners.

The board issued order 157, Nov. 4, approving Alberta & Great Waterways tariffs as follows:—

A. & G.W.Ry. no. 1, P.U.C. no. 1, Sup. 1 to A. & G.W.Ry. no. 1, Sup. 1 to A. & G.W.Ry., P.U.C. no. 1, Table of distances.

A. & G.W.Ry. no. 2, P.U.C. no. 2, Sup. 1 to A. & G.W.Ry. no. 2, Sup. 1 to A. & G.W.Ry., P.U.C. no. 2, Various commodities.

A. & G.W.Ry. no. 3, P.U.C. no. 3, Sup. 1 to A. &. G.W.Ry. no. 3, Sup. 1 to A. & G.W.Ry., P.U.C. no. 3, Various commodities to Edmonton.

A. & G.W.Ry., no. 4, Distributing class rates.

A. & G.W.Ry. no. 5, P.U.C. no. 4, Class rates.

A. & G.W.Ry. no. 6, P.U.C. no. 5, Farm settlers' effects.

A. & G.W.Ry. no. 7, P.U.C. no. 6, Standard mileage freight tariff.

Sup. 1 to A. & G.W.Ry. no. 4, Distributing class rates.

Sup. 1 to A. & G.W.Ry. no. 6, C.R.C. 6, P.U.C. no. 6, Farm settlers' effects.

A. & G.W.Ry. no. 8, C.R.C. no. 7, P.U.C. no. 7, Rates, rules and regulations.

A. & G.W.Ry. no. 1, P.U.C. no. 1, Standard maximum passenger rates.

Order 158, issued Nov. 9, authorized the Canadian Northern Western Ry. Co. to build its Oliver-Battleford Branch across the highways at the points set out in the following plans:—Plan of right of way through Tp. 59, R. 15-14, w. 4th Meridian, mileage 75.83-88.76. Plan of right of way through Tp. 59, R. 13-12, w. 4th Meridian, mileage 88.76-101.37, subject to such terms and conditions as to protection, safety and convenience to the public as the board may deem it expedient to make.

The Algoma Central and Hudson Bay Railway's Finances.

What may be regarded as a favorable indication is the discharging of the receivers of the Algoma Central & Hudson Bay Ry. This does not mean that the railway is fully out of the woods, but it may be that it is a step in that direction. The railway made default of bond interest on Dec. 1, 1914, and shortly afterwards the Algoma Central Terminals defaulted. The latter's chief and only source of revenue was from the railway, which held its property under lease, the terms of which were that the railway should pay to the Terminals an amount sufficient to cover administration expenses, taxes and interest on its bonds. Incidentally, it may be mentioned, in view of the interest manifested in the United States in the Lake Superior Corporation stock, that that corporation guaranteed the bonds of the terminals and the railway companies. So far, the corporation has not been able to fulfil its undertaking. In Feb. 1915, receivers were appointed for the railway company by the Exchequer Court, and in May, 1915, for the terminals company. A question arose as to the rights respectively of the two companies, which were parties to the lease, respecting which an agreement was made between the bondholders of the two companies, and which was ratified by the Dominion Parliament at its last session. Under this arrangement a bondholders' committee was appointed, which now is in practical control. The revenues of both companies are paid to this committee, and they are distributed according to the agreement arrived at. The effect of the passing of the receivership will be that certain expenses will cease, and that the bondholders' committee will be freed from the formalities which a receivership necessarily imposed. Meanwhile, this arrangement does not in any way absolve the Lake Superior Corporation from its obligation as guarantor of the bonds referred to.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearings took place, and not those on which the orders were drawn.

25645. Nov. 17.—Dismissing F. N. Trite's application for order requiring C.P.R. to build a water gate at culvert about 3 miles west of Agassiz, B.C.

25646. Nov. 18.—Extending to Nov. 30 time for building transfer tracks between Canadian Northern Ry. and Grand Trunk Pacific Ry. at Yorkton, Sask.

25647. Nov. 20.—Authorizing York Tp. to extend Craydon Ave. easterly over G.T.R. and C.P.R. lands to easterly limit of C.P.R. lands.

25648. Nov. 17.—Authorizing C.P.R. to build branch line for Prairie City Oil Co., Moose Jaw, Sask.

25649. Nov. 20.—Relieving G.T.R. from further protection at first public crossing west of Duhlin station, Ont.

25650. Nov. 18.—Ordering Canadian Northern Quebec Ry. to replace and maintain train service in effect last year leaving Huberdeau 5 a.m., arriving at Montfort Jct. 7.50 a.m., and leaving Montfort Jct. 5.30 p.m., arriving Huberdeau 7.15 p.m.

25651. Nov. 17.—Ordering G.T.R. to employ watchman at first public crossing west of Lansdowne, Ont.

25652. Nov. 20.—Approving deviation in G.T.R. through Campbellford, Ont., necessitated through construction of Trent Canal.

25653. Nov. 20.—Dismissing G. T. McKeough's application for order directing Chatham, Wallaceburg & Lake Erie Ry. to put in force, between Chatham and Cedar Springs, Ont., a business passenger rate not to exceed 25c for one round trip ticket. This order was published in full in our last issue.

25654. Nov. 21.—Extending to May 31, 1917, time within which Canadian Northern Ry. shall build a shelter station and siding with cattle pen and loading chute at Twin Elm, Ont.

25655. Nov. 21.—Approving G.T.R. plan of London Road crossing, Thamesville, Ont., as built.

25656. Nov. 23.—Ordering G.T.R., C.P.R. and Canadian Northern Ry. to file not later than Nov. 27, to become effective Dec. 1, supplements to joint class freight tariffs, rates not to exceed those now in effect by more than 2c per 100 lbs. in the 1st class; the remaining classes of Canadian Freight Classification to be proportioned to the 1st class rates so increased in accordance with the standard maximum mileage tariff. This order was published in full in our last issue.

25657. Nov. 22.—Authorizing Grand Trunk Pacific Branch Lines Co. to build a spur to mile 46.2 crossing First Ave., Sixth St. South and a lane in Battleford, Sask.

25658. Nov. 23.—Authorizing Wright Tp., Que., to build highway crossing over C.P.R. Gatineau Branch at road between lots 20 and 21, R. 6.

25659. Nov. 23.—Authorizing Canadian Northern Quebec Ry. to open for freight traffic its line through Arundel, Ponsonby and Amherst Tps., Argenteuil and Ottawa counties, mileage 0 to 9.57.

25660. Nov. 25.—Authorizing Schomberg & Aurora Ry. to build spur for Sir Henry M. Pellatt along Con. 3, King Tp., Ont.

25661. Nov. 23.—Approving Michigan Central Rd. plan of changes in interlocking plant at crossing of G.T.R. at Campbellford, Ont.

25662. Nov. 24.—Approving agreement between Bell Telephone Co. and Canadian Explosives, Ltd., Nobel, Ont.

25663. Nov. 24.—Authorizing Esquimalt & Nanaimo Ry. to build spur for W. F. Clark Lumber Co., Victoria, B.C.

25664. Nov. 24.—Approving agreement between Bell Telephone Co. and Parkhill Rural Telephone Co., Middlesex county, Ont.

25665. Nov. 23.—Relieving C.P.R. from speed limit of 10 miles an hour at crossing of Aylmer Road, Hull, Que.

25666. Nov. 23.—Ordering Canadian Northern Ry. to grade road south of and parallel to its right of way between the road allowance and west end of station grounds, Alsask, Sask.

25667. Nov. 27.—Ordering G.T.R., C.P.R. and Canadian Northern Ry. to file commodity rates on white lead, in carloads, from Montreal, of 2c per 100 lbs., over commodity rates which were being charged thereon when the application in the Eastern Rates Case was presented to the Board, but restricted to destinations where paints are manufactured, to become effective by Dec. 15.

25668. Nov. 25.—Approving Canadian Northern Ry. plans of standard farm crossings for its eastern lines.

25669. Nov. 27.—Authorizing Town of Welland, Ont., to build highway over G.T.R. at Hagar St.

25670. Nov. 27.—Approving agreement of City of Brantford, Ont., as owner of Brantford Municipal Ry. with Lake Erie & Northern Ry. for sale by the city of a portion of Grand Valley Ry.

25671. Nov. 28.—Authorizing C.P.R. to build spur for Hammond Cedar Co., Port Hammond, B.C.

25672. Nov. 28.—Authorizing G.T.R. to build spur on part of lot 2509, St. Cunegonde Ward, Montreal.

25673. Nov. 28.—Authorizing C.P.R. to open for freight traffic its Stirling East Branch, Alta., from mileage 71.7 to 85.1.

25674. Nov. 28.—Authorizing Harris rural municipality to build highway crossing over Canadian Northern Ry. at Tessier, Sask.

25675. Nov. 27.—Approving G.T.R. stock and cattle pass standard plans.

25676. Nov. 27.—Ordering G.T.R. to flag all train movements over Sherman Ave. crossing, Hamilton, Ont.

25677. Nov. 28.—Relieving G.T.R. from limitation of 10 miles an hour at first crossing west of Lakeview golf links station between Mimco and Port Credit, Ont.

25678. Nov. 28.—Relieving C.P.R. from providing further protection at crossing at mileage 84.9, Lachine Subdivision, Plaisance, Que.

25679. Nov. 28.—Relieving C.P.R. from providing further protection at crossing at mileage 18.79, Ste. Agathe Subdivision, St. Jerome, Que.

25680. Nov. 29.—Authorizing Town of St. Laurent, Que., to build highway crossing over G.T.R. at Grande Alle de Florence.

25681. Nov. 28.—Approving agreement between Bell Telephone Co. and Mallorytown Telephone Co., Leeds county, Ont., Nov. 20.

25682. Nov. 28.—Authorizing G.T.R. to build spur for International Nickel Co., Humberside Tp., Ont.

25683. Nov. 27.—Authorizing Campbellford, Lake Ontario & Western Ry. and Canadian Northern Ry. to operate at crossing of C.N.O.R. by C.L.O. & W.Ry. spur at mileage 1.05, Trenton, Ont.

25684. Nov. 27.—Dismissing application of City of Chatham, Ont., for removal of telegraph and telephone poles and wires from the streets by C.P.R., Great North Western Telegraph Co. and Bell Telephone Co.

25685, 25686. Nov. 30.—Authorizing Canadian Northern Ontario Ry. to cross Wharf St. with its proposed connection between passing siding and spur to the rolling mills at Belleville, Ont, and authorizing it to connect the passing track with the spur to the rolling mills at Belleville, Ont.

25687. Nov. 28. Approving proposed supplement 8 to Canadian Freight Classification 16, revising ratings of furs, hides, pelts and skins.

25688. Nov. 30.—Extending to June 1, 1917, time within which C.P.R. may divert highway at mile 15.45, Sagwa, N.B.

25689. Dec. 2.—Authorizing Hamilton St. Ry. to operate over crossings of Hamilton Radial Ry. and G.T.R., pending installation of interlocking plant.

25690. Dec. 1. Authorizing C.P.R. to build two spurs for St. Maurice Paper Co. at Cap de la Madeleine, Que.

25691. Dec. 1.—Authorizing C.P.R. to build spur to existing siding of Gutta Percha & Rubber, Ltd., between Lansdowne and O'Hara Aves., Toronto.

25692. Dec. 1.—Ordering London & Port Stanley Ry. to install improved type of automatic bell at crossing at William St., St. Thomas, Ont.

25693. Nov. 30.—Ordering G.T.R. to reopen old farm crossing on Lot 5, R. 5, Ashton Tp., Que.

25694. Nov. 30.—Extending for 50 days from date time within which C.P.R. shall install gates at crossing of Main St., Farnham, Que.

25695. Dec. 4.—Authorizing Canadian Northern Ry. to remove station agent at Allans, Ont., caretaker to be appointed for accommodation of passengers and l.c.l. freight and express matter.

25696. Nov. 30.—Ordering Canadian Northern Ry. to build crossing over its tracks at Kelly St., Carillon, Que.

25697. Dec. 1.—Authorizing Essex Terminal Ry. to open for traffic its line through portion of Windsor and through Sandwich, Ont., to north side of Titcombe Road, Ojibway, Ont., mileage 3.25 to 8.58.

25698, 25699. Dec. 4.—Approving agreements between Bell Telephone Co. and Sandwich West Co-Operative Telephone Association, Essex County. Ont., and East Middlesex Telephone Co., Middlesex. Oxford and Perth Counties, Ont.

25700. Dec. 5.—Relieving C.P.R. from further protection at highway crossing between Secs. 11 and 12, Tp. 10, R. 21, w.p.m., Man.

25701. Dec. 4.—Authorizing Canadian Northern Ry. to cross 12 highways in Norton municipality, no. 69, Sask.

25702. Dec. 6.—Extending to May 30, 1917. time within which G.T.R. may erect station build- and spur for City of Toronto Water Works Department at John St. pumping station.

25703. Dec. 6.—Extending to May 31, 1917, time witihn which G.T.R. may erect station building at Eganville, Ont.

25704. Dec. 7.—Approving agreement between Bell Telephone Co. and Mississippi Telephone Co., Lanark County, Ont., Nov. 29.

25705. Dec. 4.—Extending to such further time as Board otherwise directs, the requirements of order 12723, Dec. 6, 1910, re Canadian Northern Ry. crossing of Hurdman's Road, Nepean Tp., Ont.

25706. Dec. 9.—Relieving G.T.R. from further protection at Town Line between Middleton and Wyndham Tps., Ont.

25707. Dec. 2.—Authorizing Canadian Northern Ontario Ry. to expropriate additional lands for connection with C.P.R. near Chaudiere Jct., Ont.

25708. Dec. 2.—Ordering Canadian Northern Ry. from Dec. 11 to run train which leaves Ottawa at 8 a.m. for Montreal, and train which leaves Montreal at 3.30 p.m., for Ottawa, up Huberdeau Branch after reaching Rinfret Jct. as far as St. Jerome and back again.

25709. Dec. 2.—Ordering Canadian Northern Quebec Ry. to provide additional train service between St. Jerome, Montfort Jct. and Joliette; effective Dec. 11.

25710. Dec. 12.—Authorizing C.P.R. to build spur on its MacTier Subdivision at mileage 52.8, from Ypres, Ont., to Borden Camp.

25711. Dec. 9.—Ordering C.P.R. to plank crossings from mileage 34, 34.4 36.7, and 36.9 on Yale Road, B.C., also the farm crossings at mileage 36 and 36.3.

25712. Dec. 11.—Approving plans and specifications of Hartnett Drain near G.T.R., Canboro Tp., Ont.

25713. Dec. 9.—Authorizing G.T.R. to build siding for Canada Stove & Foundry Co., St. Laurent, Que.

25714. Dec. 9.—Approving clearances at track shed of Lake of the Woods Milling Co., Medicine Hat, Alta., on C.P.R. undertaking to keep employes off sides of cars.

25715. Dec. 12.—Amending order 25702, Dec. 6, by changing the year from 1916 to 1917. This has already been done in our summary.

25716. Dec. 14.—Amending order 25706, Dec. 9, by changing word Counties to Townships. This has already been done in our summary.

25717. Dec. 13.—Authorizing C.P.R. to open for traffic portion of its Mountain Subdivision, B.C., from mileage 76.51 to 91.33, including Connaught Tunnel.

25718. Dec. 13.—Authorizing C.P.R. to build spur for Polson Iron Works, Toronto.

25719. Dec. 13.—Authorizing G.T.R. to build extension of siding for C. W. Sharp & Co., Toronto.

25720. Dec. 13.—Authorizing Grand Trunk Pacific Ry. to build highway crossing over diverted highway s.w. ¼ Sec. 6, Tp. 36, R. 14, w.3.m., Biggar, Sask.

25721. Dec. 15.—Authorizing Canadian Northern Ry. to remove station agent at Crosby, Ont., caretaker to be appointed for accommodation of passengers.

25722. Dec. 15.—Ordering C.P.R. to build highway crossing in Sec. 3, Tp. 8, R. 2, e.p.m., Man.

25723. Dec. 13.—Authorizing City of Winnipeg, Man., to build highway crossing over C.P.R. Pembina Branch at St. Matthews Ave.

25724. Dec. 15.—Authorizing Canadian Northern Saskatchewan Ry. to build transfer track with C.P.R. at Yorkton, Sask.

25725. Dec. 16.—Authorizing Grand Trunk Pacific Branch Lines Co. to cross 15 streets in Regina, Sask.

25726. Dec. 18.—Extending to June 18, 1917, time within which C.P.R. shall build extension to Boake Mfg. Co.'s siding, for Harry Webb Co., Toronto, as authorized by order 25116, June 28.

25727. Dec. 18.—Ordering Lake Erie & Northern Ry. to build cattle pass for R. P. Irving, South Dumfries Tp., Ont.

Steam Railway Track Laid in 1916.

A preliminary table of new track laid in 1916 by railways throughout Canada, made up from official replies to our annual circular, and from estimates made from information otherwise obtained, is given below. The principal tracklaying done was on the three lines in Alberta, running out from Edmonton, and being built by J. D. McArthur, viz.: the Edmonton, Dunvegan & British Columbia Ry., the Alberta & Great Waterways Ry., and the Central Canada Ry.. the greater part of which was done early in the year.

The mileage on the railways marked with an asterisk (*) has been estimated, and is subject to revision.

	Miles.	Miles
*Alberta & Great Waterways Ry.—		
Mileage 174.5 to Fort McMurray, Alta., approximate mileage 300 .		125.50
Canadian Northern Ry. System—		
Canadian Northern Quebec Ry., Arundel to Kaolin, Que.	9.00	
*Canadian Northern Pacific Ry.—		
Victoria to Patricia Bay	13.72	
Victoria towards Alberni	1.00	
	14.72	
		23.72
Canadian Pacific Ry.—		
*Camp Borden lines	3.75	
Pakowi to Manyberries, Alta.....	10.40	
Stoney Creek to Cambie	10.50	
		24.65
*Central Canada Ry.—		
Heart River to Peace River Landing, Alta., M. 47.60 to M. 49.50		1.90
*Edmonton, Dunvegan & B.C. Ry.—		
M. 336.9 to Spirit River, M. 357 ..	20.10	
Spirit River to Grande Prairie Settlement, Alta.	48.50	
		68.60
Grand Trunk Pacific Ry.—		
Moose Jaw N.W. Branch M. 67 to 70	3.00	
Regina-Moose Jaw Branch to Elevator	2.65	
		5.65
Grand Trunk Ry.—		
Angus to Camp Borden, Ont.		4.21
Hudson Bay Ry.—		
Manitou Rapids, M. 241.24, to Kettle Rapids		91.00
*Intercolonial Ry.—		
Halifax Terminal Ry.		2.75
Kettle Valley Ry.—		
To connect track ends in Coquihalla Valley, B.C.		1.70
*Pacific Great Eastern Ry.—		
Clinton northerly towards Prince George, B.C.		16.00
*Prince Edward Island Car Ferry—		
Connections at Port Borden, P.E.I., and Cape Tormentine, N.B.		1.00
Quebec & Lake St. John Ry.—		
Lorette to Huron River, Que. ...		10.00
Toronto, Hamilton & Buffalo Ry.—		
Dunnville to Port Mortland, Ont...		5.00
Vancouver, Victoria & Eastern Ry. & N. Co.—		
Completion of Sumas Landing, Connor Line	1.13	
Connection between Kett'e Valley Lines and Canadian Northern Pacific Ry. at Hope, B.C.	0.17	
		1.30
Total		382.98

United Yardmasters' Association.—A branch of this association has been formed in Alberta, with Calgary as its headquarters, and the following as officers for the current year:—President, D. A. Dart, C.P.R.; Vice President, G. H. Turner, C.N.R.; Secretary, T. Doherty, C.P.R.; Treasurer, A. E. Irvine, C.P.R., all of Calgary. The association was originally established in Duluth, Minn., and devotes its attention exclusively to efficiency studies in connection with yard and terminal work, labor and wages questions not being among the matters dealt with. There are between 70 and 80 men on the different railways in Alberta eligible for membership.

Necessity for Increased Per Diem Charges for Cars.

The Board of Railway Commissioners has issued a statement dealing with car shortage, saying that the per diem rate and any system of fines which may be adopted ought to be sufficient to make it to the interest of receiving lines to return freight cars as called for by the Car Service Rules. The statement proceeds:—"Nothing short of this will produce a material improvement. The present movement of cars is so multifarious that it is impossible to provide for what would or would not be misuse for each particular movement without resulting in a situation so complicated and requiring so much accounting that it would probably defeat its own means. It must also be remembered that the use of cars in certain trades differs from that of others. For example, the G.T.R. does a large business in coal from the Niagara gateway to Ontario points. The car equipment used does not belong to the G.T.R., but either to the originating railway or to the coal mine operators themselves. These railways and mine operators, having special equipment which particularly suits their purposes, have in the past insisted on all commercial loadings being carried on their own equipment. To increase the per diem in this particular case would simply add to the cost of the movement without the slightest benefit. Without a large per diem charge the different carriers ought to be able to use at least a fair proportion of their own equipment. On the other hand, so far as the coal movement into Toronto is concerned, if the G.T.R. did not carry the cars with proper efficiency and speed the movement would be helped and congestion would be relieved if the G.T.R. was compelled to give a proper car service by a substantial fine."

The statement points out that while the cost of freight cars has advanced, the per diem charge of 45c has remained constant notwithstanding. The railways in the east and the west have placed embargoes on the traffic of other lines owing to the fact that the lines against whose business the embargoes have been placed have on their tracks a large quantity of cars belonging to the embargoing line. The direct result of such embargoes penalizes traffic and shippers for what is claimed to be misuse of cars by railways, the shippers being much more injured than the railways can possibly be. In this connection railways which are short of equipment can well afford to hold the cars of other railways, pay the per diem charge and make money. In effect, cars that have been interchanged have frequently been used by the receiving line practically as its own equipment, resulting in car shortage on lines which otherwise would have been able to properly look after their business.

Obtaining Maximum Use of All Freight Cars.—The Southern Pacific Co. is utilizing open freight cars for carrying freight which is usually shipped in box cars in order to relieve the car shortage. These cars are fitted with tarpaulins, which are stencilled with the company's name and numbered consecutively. These are billed at forwarding stations with $40 advance charges, and agents at destinations secure the tarpaulin and bill it back to the forwarding point. The St. Louis & San Francisco Rd. papers certain stock cars for shipping merchandise to western points.

Lord Shaughnessy Takes His Seat in the House of Lords.

Lord Shaughnessy, President, C.P.R., during his recent visit to England, took his seat in the House of Lords on Nov. 23, the ceremony being referred to by the Canadian Gazette as follows:—"The new peer, attired in his robes of scarlet and ermine, appeared with his sponsors, Lord MacDonnell and Lord Northcliffe, also robed, and accompanied by Black Rod and the gorgeously clad Garter King of Arms. The little procession advanced to the table, where the oath was taken and the roll signed by Lord Shaughnessy. Then the new peer was escorted to his seat, from which he rose thrice to make the obeisance to the Lord Chancellor. Subsequently he was escorted to the woolsack and introduced to the Lord Chancellor."

Among those present were:—Mrs. A. T. Shaughnessy; Sir Thos. Skinner, director, C.P.R.; G. McL. Brown, European Manager, C.P.R., and Mrs. Brown; Sir Montague and Lady Allan; Hugh A. and Mrs. Allan; H. Maitland Kersey, Managing Director, Canadian Pacific Ocean Services, Ltd.

"It is of sentimental interest to note that Lord Shaughnessy has the peg used by the late Lord Strathcona to hang his hat and coat on, this peg happening to be vacant."

The Right Hon. Baron Shaughnessy, of Montreal, Canada, and Ashford, Ireland.
In his robes on his introduction into the House of Lords.

A Land Grant Suit.—A British Columbia court has before it the action of Bagley against the British Columbia Southern Ry., one of the C.P.R. lines. The plaintiff bought from the company in 1911 some 2,560 acres of its subsidy grant lands, which he immediately subdivided and sold at a profit. He claims that he could not secure a title to the land from the company, thereby failing to realize his profit. He asks $25,000 damages.

Canadian Railway Track for Military Railways in France.

In order to help in providing adequate railway facilities behind the fighting lines in France, the British Government has appealed to the Canadian Government to help in providing steel rails, and a memorandum issued at Ottawa, Dec. 18, says in part:—"The Imperial Government has asked the Dominion to help solve the difficulties of the French railway situation, both in the relief of port congestions and the movement of guns and munitions behind the lines. The transportation facilities in France have been inadequate to permit the allies to take full advantage of the material and supplies available, and it is felt that the war could be materially shortened and thousands of lives saved if sufficient additional railway facilities could be provided promptly. The British Government is doing what it can to supply the deficiency from England, and Canada was asked whether there was any possibility of securing rails and other track material from the Dominion to meet what is regarded by the British Minister of War as a vital need, and suggesting that if no other solution was possible certain already existing trackage might be taken up and sent forward. The call on the Dominion is for from 1,200 to 1,500 miles of railway trackage."

After canvassing the steel situation in Canada, the Railways Department authorized the immediate taking up of sufficient steel rails on unused sidings of the Canadian Government Railways in the east to lay 20 miles of track for shipment at once. It was reported, Dec. 20, that the taking up of this track had already been put in hand. In order to provide a further supply of rails, the department is said to have authorized the taking up of an additional 300 miles of track on the Government railways, consisting of duplicate tracks and sidings at points where the traffic demands are lightest. The Canadian Pacific, Canadian Northern, Grand Trunk Ry. and Grand Trunk Pacific Ry. have been invited to cooperate, and it was reported, Dec. 20, that arrangements would likely be made for taking up about 220 miles of track west of Edmonton, where the G.T.P.R. and the Canadian Northern Ry. parallel each other, and where the present traffic is not too heavy to be worked over one line.

The selection of the points at which track is to be taken up has been considerably facilitated by the work of the commission of enquiry which has been appointed since the Dominion Parliament's last session to investigate the whole Canadian railway situation. This commission had obtained much information as to parallel lines, etc., throughout the Dominion which could with advantage be eliminated, and this commission, the Board of Railway Commissioners and the Railways Department are working in harmony to give the greatest possible aid to the Imperial authorities in the matter. Local labor is being utilized, and where there are not sufficient men in any district to do the work, troops will be sent in to remove the track.

L. W. Hill, Chairman and President, Great Northern Ry., is reported to have stated that a a conference of representatives of western railways in Chicago, recently ,tentative arrangements had been discussed for the control of about 48,000 miles of telegraph lines, but that nothing could be made public.

The Death of Lieutenant Bruce H. A. Burrows.

A few hours after Canadian Railway and Marine World for December had gone to press, on Nov. 29, our Managing Director, Acton Burrows, received a telegram from the Militia and Defence Department, Ottawa, stating that his younger son, Bruce Hosmer Acton Burrows, B.A.Sc., lieutenant, 12th Field Co., Canadian Engineers, had been killed in atcion in France. The following particulars were received subsequently by mail.

MAJOR C. T. TROTTER, of St. John's, Que., in command of the company, wrote: "In the field, Nov. 26.—It was with the deepest regret that I heard this morning of the death of your son. He went out last night in charge of a party which was to put in some barbed wire at a very important strategical point, but on the way in, a chance shot, dropping right in front of him, wounded him so severely that he lived but a very few moments Mr. Henderson" (another lieutenant of teh company),[illegible] who was with him at the time, did all in his power for him, but without avail. He passed away almost immediately, and it is certain that he was in no pain, because he was unconscious from the time he was hit.

"He will be a great loss to the company, for he was an excellent officer, very efficient and absolutely reliable. All the officers of the company, and, in fact, all ranks, will miss him very much indeed, for he was most popular with all. You have every reason to be proud of your son, sir, for he was one of the best officers I ever had anything to do with, and the work he has done since coming to France would be a credit to any man. I thought a great deal of him, and can appreciate your loss and sympathize with you in your grief."

J. BALFOUR THOM, of Montreal, another lieutenant in the same company, wrote on the same date, in part: "As I was probably Bruce's greatest friend in the company, I am writing to give you what details I can and to extend my deepest sympathy to you and his other relatives in your great loss. Since joining the Engineers in Ottawa, Bruce and I have been almost inseparable, always living together, and in that time I have grown to appreciate him more every day, and a better friend I shall never have. One learns more about a friend in a few nights out here than would be possible in years of civilian life, and Bruce and I have gone through some very tough nights here together. He was always absolutely himself, cool and collected, seeing that the work was properly done and also looking after his men. He was absolutely cool under fire, and it was probably this coolness and the great interest he showed in their welfare that made him so popular with the men of his section, and there was nothing they would not do for him, and do gladly.

"Last night he and another officer, Mr. Henderson, were taking a party of sappers to put up wire out in front, and although it was a ticklish bit of work we had no anxiety for them, as we had been out the night before and had found it fairly quiet. On the way into their work a high explosive shell fell just in front of them and one of the flying fragments struck Bruce, death following instantaneously. His body was brought out at once, and it was a great token of the respect in which the men held him that they volunteered to do this under shell fire. The funeral was held today at 4 p.m., being attended by Major Irving, D.S.O., of Toronto, the C.R.E. of the division, Major Ward, the Adjutant, and all the officers of this company. The officers of the other two companies were unable to attend. The service was performed by Capt. McCaskell, Chaplain of the 73rd Battalion, and afterwards a wooden cross, painted white with black lettering, was erected. The sergeant especially asked me to extend his sympathy, and also our servant, Foulkes. I cannot express my own feelings more than by saying that I have lost my best friend, and who can say more, and although I shall miss him, yet I feel proud to think that he died as a man should, and it is a memory I shall always cherish."

CHARLES IVEY, of London, Ont., also a lieutenant in the same company, wrote

Bruce H. A. Burrows, B.A.Sc.,
Lieutenant, 12th Field Co., Canadian Engineers.
Killed in action Nov. 25, 1916.

from London, Eng., on Dec. 4, in part:—"I cannot tell you how cut up we all are over Bruce's loss, as we have all been together over a year now and have grown to be like a big family. It was especially hard, as it was our last night in before leaving the Somme, and Bruce had done such good work and had been so cool under fire. We laid him to rest in a little British cemetery about a mile from Albert, on the south side of the Albert-Baupaume Road. There have been a good many buried there, but none more regretted than Bruce. The whole company turned out, together with our headquarters staff, and after the service and he was laid to rest they filed by and saluted him. His men feel his loss keenly. We do indeed get attached to the men while more or less taking care of them, and I am sure there were a great number of them who found it hard to keep back the tears and a lump in the throat. It seems so hard that Bruce should be snatched away from us when just in the prime of life, and after doing such good work, too. He was always cool and considerate of his men. When he was hit, he was going in ahead of them, to reconnoitre before they came up to work. He never asked them to do anything nor go anywhere that he would not undertake himself, and he had the universal respect of all."

The late B. H. A. Burrows was born in Winnipeg, June 30, 1893, and went to Toronto in 1895, when his father removed there from Winnipeg with his family. He was educated at the Toronto Model School, Harbord Collegiate Institute and Toronto University, taking the mechanical engineering course at the latter and graduating June 6, 1913, with the degree of B.A.Sc. During his university vacations he did practical mechanical work in the G.T.R shops at Stratford, Ont. After graduating he was in charge of the Coleman Fare Box Co.'s factory at Tottenham. Ont., for a year and was afterwards in the Canadian Allis Chalmers, Ltd., works, Toronto.

On Sept. 15, 1915, he was gazetted a provisional lieutenant (supernumary), Canadian Engineers, and trained at Rockcliffe Camp, Ottawa. After passing a very satisfactory examination he was appointed a lieutenant in the 7th Field Company, Canadian Engineers. He left Ottawa on Mar. 9, 1916, when three companies of engineers started overseas. After a short stay Camp Bordon, in Hampshire, he took a two months course at the Royal Engineers College at Brightlingsea, Essex, where he passed another very successful examination. After that, with the exception of a short time spent at Christchurch, in Hampshire, where he instructed two engineers companies in pontooning, etc., he was at Bramshott Camp, Hampshire, until Aug. 11, 1916, when he went to France with the 4th Canadian Division, his company's designation being then changed to 12th Field Company, Canadian Engineers. He was at the front in Belgium until towards the end of September, when he was transferred to France and went to the front on the Somme.

He was a student of the Canadian Society of Civil Engineers and a member of Ionic Lodge, A.F. & A.M., Toronto. His surviving relatives, besides his father, are his elder brother, Aubrey Acton Burrows, Secretary and Business Manager, Acton Burrows, Limited, proprietors, Canadian Railway and Marine World; and two sisters, Miss Blair Acton Burrows, of Toronto, and Mrs. G. Grenville Hunter, of Hartford, Conn.

Glimpses of the Military Engineers' Work.

Lieut. Burrows was most enthusiastic about his work, and his letters from the front were always very cheerful and optimistic. For obvious reasons he spoke of his work only in general terms, but the following extracts from recent letters will give an idea of some of the military engineers' duties.

Aug. 30. "We are having two or three days' rain to warn us that winter is coming, although we are counting on another month of fine weather. The rain plays the deuce with the trenches, unless they are in first class shape, and when we came into this area really none of them could be said to be in that condition. I have been fighting the rain for a couple of days, and it is no easy task. I have never seen any rain to quite compare with what we are working in. After half an hour's rain the bottom of a trench has about a foot of 'pea soup' in it, and the only way to cope with it is to put what they call 'bath mats' in every trench. In this small job alone millions of feet of lumber are used, and the cost is appal-

ing. You can get no idea at all without seeing things."

Sept. 8. "I have a very big area to look after and it keeps me busy getting round it in day time, supervising my different jobs, and then at night I have to plan out future work and make out reports of what I have done, am doing and am going to do. The infantry are popularly supposed to do a lot of walking, but they are not in it with us at present. I average at least 10 miles a day over land, through communicating trenches and reconnoitring new parts of my area."

Sept. 13. "My men are an exceptionally fine lot, making good at nearly everything, and consequently making things much easier for me. I have a couple of hundred men working for me, besides my own sappers, and so I have quite a bit to do. My n.c.o.'s and most of my sappers are getting used to handling parties. The other day I showed one of my sappers about 100 yards of trench which I wanted dug, and which I had already laid out with tape. I got a party of 50 men, and he and his brother got the job done in two nights, and well done. My work is very varied at present. My chief jobs are fixing a couple of communication trenches, building some dugouts, a trench motor emplacement, and a tram line, quite a variety, isn't it?"

Sept. 22. "I have been lucky enough to be looking after the area held by the 72nd Battalion, which is about the finest that ever left Canada, and have got in a lot of good work. Although we have only been here about five weeks, we have earned a very favorable reputation as to the amount of work done. We were using such a lot of material that the Chief Engineer of our army wanted to know where it was going. He was promptly shown that it was right on the job."

Oct. 14. "I have had a couple of nights' work up in front, and have tonight off, unless some orders come. The first night we started off about 5 p.m. and got back about 5 next morning. Another lieutenant and I were working together that night, with a couple of sappers, and laid out a lot of work. We were wandering around above ground in behind our own front line, and things were much quieter than I expected. Last night we dug most of the work we laid out the night before. I had to meet parties totalling more than 1,000 men, so that you can seen that an engineer subaltern has at times quite a bit of responsibility. I started at 4.45 p.m. on a bicycle with my sergeant, and met the parties and guided them up to the work over several miles of ploughed up country and remains of villages; worked until 3.30 a.m., came home and got to bed about 7, not a bad night's work."

Oct. 19. "Everything continues to go very satisfactorily, although it is pretty strenuous at times. I have had five nights in the line out of eight that we have been in this area. We start out about 5.30 in the afternoon and get back into bed on an average of twelve hours later. Our casualties have been very slight and we have got in some very good work. The chief trouble the engineers have is getting on to the work, as it is terribly difficult to find one's way about, and some companies have managed to lose a lot of their working parties and have had to go back without getting on to the work at all. However, we have not lost a party yet. You have no idea of the conditions of the country. The shelling has practically removed all landmarks, and at times we have to march over land by the compass. The country we are working has had very heavy shelling from us and is now getting a second shelling from the Germans."

Nov. 17. "Thom" (another lieutenant) "and I have built ourselves a very nice new dugout, about 11 x 15 inside, with a good open fireplace, and now live in comfort, with hot water in the morning for shaving."

On Nov. 23, two days before he was killed, he wrote:—"We are just about at the end of our tour in the lively area and are due for a rest in one of the 'cushy' spots of the line. None of us will be sorry, as we have had a pretty strenuous time. I think leave will start for our division quite soon now."

C.P.R. Shares and Enemy Holders.

A correspondent of the London, Eng., daily press states that German holders of C.P.R. shares are shipping them to New York by submarine and selling them in the U.S. at a discount sufficient to recoup the purchasers for loss of dividend during the war. He urges that the British Government should induce the Dominion Government to declare that such sales will not be recognized, and that it is not too late to take such a step now, as the bulk of German holdings is still unsold. The C.P.R. has pointed out that the company's shares on the Montreal and New York registers do not come within the scope of the public trustee's activities, but that observing the Royal proclamation at the commencement of the war, the company has stopped transfer of shares to enemy names and the payment of dividends thereon. This leaves it open for alien enemies to transfer their shares to British subjects or to neutral aliens, and it is to be presumed that purchasers are fully aware of the risk attached to the purchase. Just prior to the war, about 15% of the 2,600,000 shares in the C.P.R. were held on the European continent, but not all in Germany or by enemy aliens.

The British Columbia Institute of Civil Engineers, which is in progress of organization, is, we are advised, intended to be a protective society, more of a union and less of a society. It is aimed to place the engineering profession in the province on an equally strong footing with the legal and medical professions, and to be strong enough to prevent municipal or provincial governments from importing United States and other outside engineers or employing inferior men to fill positions while capable engineers are available within the province. It is also aimed at having salaries and other remuneration fixed at rates in keeping with the character of the work and the reponsibilities of the work. It is not, however, intended to have this a close corporation. At present about 50 men have enrolled as members, including civil engineers, land surveyors and architects. As soon as the Vancouver branch is fully organized, a provincial charter will be applied for. L. P. Macrae is Secretary Treasurer.

Railway Noises.—The Mayor of Brantford, Ont., was informed by the Board of Railway Commissioners recently that it was not a function of the board to advise as to the operation of civic bylaws affecting railways. The matter submitted to the board was in reference to the ringing of bells and making noises "calculated to disturb the inhabitants." The board suggests that the matter is one to be decided by the civil courts.

C.P.R. Land Settlement Plans for Soldiers.

The C.P.R. has announced a comprehensive scheme for the settlement of soldiers on the company's land in Western Canada. It is proposed to provide farms in various districts throughout the west for men producing evidence of having served in the Canadian units of the British Army or Navy during the present war, who are married, are physically fit, and are approved by an examining committee appointed by the company. Two kinds of farms are to be provided in each area, improved farms and assisted colonization farms. The improved farms will have on them a house, barn and fencing, a water supply, and 40 acres of land will be broken. The colonization farms will be ordinary wild lands, selected by the colonist, who will be aided by advances and directed in making of his improvements by the company. In each area there will be a central control farm conducted by the company, in charge of the superintendent of the colony. This farm will be used for demonstrations only, the maintenance of service animals, and to have on hand the larger and more expensive machinery which individual settlers would not be able to buy at any rate at the beginning. In the case of the colonization farms, the land will be sold on a 20 years contract, no payments being due during the first 2 years. The improved farms will be rent free for 3 years, when 6% will be added to the cost of the original improvements and 20 years will be given to pay for the same. No water rent will be charged for the first two years on irrigation lands. The area of an improved farm is to be 80 acres irrigation land, or 160 acres non-irrigation land; and of a colonization farm 320 acres. Live stock, implements and seed purchased with advances made by the company are to be secured by lien notes or mortgages. The use of the heavy machinery on the central farm may be had at fixed charges per day. The superintendent will advise all settlers as to work to be done, etc. One of the improved farm colonies is being prepared north of Coaldale, Alta., where 40 farms are being laid out.

Canadian Society of Civil Engineers.—The following nominations for 1917 have been made for submission to the membership:—President, J. S. Dennis, Assistant to President, C.P.R., Montreal; Vice Presidents, G. R. G. Conway, bondholders' representative, Mexican Light & Power Co., Mexico, and formerly Chief Engineer and Assistant General Manager British Columbia Electric Ry.; J. M. R Fairbairn, Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal; J. G Legrand, Bridge Engineer, Grand Trunk Pacific Ry., Winnipeg; C. N. Monsarratt, Chairman, Quebec Bridge Commission, Montreal; Councillors, District 1—J. Duchastel, F. H. Pitcher, R. A. Ross, J. C Smith. District 2—H. Longley, C. M. Odell. District 3—A. R. Decary, S. S Oliver. District 4—John Murphy, James White. District 5—G. A. McCarthy, E. W. Oliver. District 6—A. T. Fraser, W. Pearce. District 7—R. F. Hayward, J. H. Kennedy. Two vice presidents are to be elected and two councillors in District 1, and one each in the other districts.

New York Central Rd. Plans for a $6,000,000 passenger station at Washington and Exchange Sts., Buffalo, N.Y., are reported to have been approved by the Terminal Commission.

Track Maintenance Inspection Trip on Eastern Lines, C.P.R.

The C.P.R. management takes a deep personal interest in the standardizing of track maintenance to a high point of efficiency on both main lines and branches, and a trip made last autumn, during which the photograph reproduced in the accompanying illustration was taken, is one of the many schemes which have been worked up with a view to having all our roadmasters work along the same lines and follow the best possible practice in carrying out their work. The party, which was in charge of Alfred Price, Assistant General Manager; A. C. Mackenzie, Engineer, Maintenance of Way, and E. Keough, Assistant Engineer, Maintenance of Way, assembled at Ottawa. A special observation car took the party from Ottawa to Montreal over the Montreal and Ottawa Subdivision's single track and the rock ballasted double track between Vaudreuil and Montreal. From Montreal the party went over the gravel ballasted double track to Farnham, and from there over one of the branch lines to Stanbridge, in this way giving the roadmasters a comprehensive idea as to the management's desire in the way of appearance and maintenance on different classes of track. On the return trip a few hours was spent at Farnham, and a demonstration given by the Assistant Engineer, Maintenance of Way, of an excellent method of curve lining by the string method developed by J. H. Sheahan, one of the roadmasters. The party then returned to Montreal and dispersed.

C.P.R. Track Maintenance Inspection Party at Farnham, Que.

The officials shown in this illustration are the following, reading from left to right. In each case, unless otherwise mentioned, they are roadmasters.

LOWER—W. B. Hall, White River Subdivision; F. W. Nicholls, Windsor Subd.; J. S. Richardson, Shogomoc Subd.; O. Kirkland, Montreal Terminals Subd.; J. C. Walsh, Newport and Orford Subd.; A. Price, Asst. Genl. Mgr.; A. C. Mackenzie, Engr. Maintenance Way; E. Keough, Asst. Engr. Maintenance Way; S. Lackey, Orangeville, Elora & Teeswater Subd.; L. Berger, Winchester Subd.; P. Chicoine, St. John, Mattawamkeag, Shore Line Subd.; N. McLuaghlin, Sherbrooke & Megantic Subd.; J. Hurson, Trois Rivieres West Subd.

MIDDLE ROW—T. J. Armstrong, Parry Sound Subdivision; C. Verner, Trois Rivieres East Subd.; C. Lampard, H. & G. & Listowel Subd.; T. Netterfield, MacTier & Coldwater Subd.; J. Goodman, Kingston & Godfrey Subd.; J. E. Steele, St. Marys, Port Burwell & St. Thomas Subd.; J. H. Guthrie, Moosehead & Mattawamkeag Subd.; J. R. Brennan, Montreal & Ottawa Subd.; J. H. Boyle, Quebec District; L. Bazinet, Acting Roadmaster, Drummondville, St. Guillaume & Stanbridge Subd.; L. Hebert, Nemegos Subd.; A. Seal, North Bay Subd.; Geo. Spicer, Oshawa, Subd.

UPPER ROW—M. Long, Belleville Subdivision; A. Frost, Peterboro Subd.; A. Mercier, Lachute Subd.; F. Belkia, Prescott Subd.; D. Wilson, Heron Bay Subd.; J. Coughlin, Nipigon Subd.; T. Landers, Adirondack Subd.; R. Shanks, Webbwood & Thessalon Subd.; W. Kelly, Cartier Subd.; J. Kelly, Chalk River Subd.; A. Purvis, General Superintendent, Ontario District; C. Donnelly, Acting Roadmaster, Havelock Subd.; P. Coakley, Galt Subd.; W. Code, Toronto Terminals Subd.; A. Mackenzie, Port McNicoll & Bobcaygeon Subd.; D. McMillan, Acting Roadmaster, Winchester Subd.; S. Jeffrey, Roadmaster, Maniwaki Subd.

D. Morice, who retired recently from the position of Freight and Customs Agent, G.T.R., Niagara Falls, Ont., and who has removed to Stratford, Ont., in writing asking to have his address changed to the latter place, says: "I certainly cannot do without Canadian Railway and Marine World."

C.P.R. Enquiry into Labor Situation.

J. S. Dennis, Assistant to the President, C.P.R., Montreal, has issued the following circular:—

"Before the close of the war Canada should prepare for the return to civil employment of our returned soldiers and for the immigration of a large number of ex-soldiers from the disbanded armies of Europe. The larger number of these men will be looking for work, and unless some scheme is prepared in advance for their reception and assistance, serious congestion of unemployed in the larger centres will be sure to occur. To permit of the problem being intelligently dealt with, it is necessary to have available some reliable statistics as to the present labor situation, with an estimate—of the openings for additional skilled and unskilled labor. The C.P.R. Co. desires to obtain this information as fully as possible, so as to enable it to answer intelligently through its large number of offices in Canada, the United States and Europe, the questions which will be asked officials regarding openings for employment, and also to enable them to assist, as far as possible, in directing the movement of those seeking employment so as to prevent congestion and trouble. Attached to this letter is a blank form setting forth certain questions which we will be pleased if you will fill in and return. It is understood that the information will be treated as strictly confidential as regards individual firms."

The following information is asked:—Name of firm. Location. Province. Nature of business. Average number employed — men — women. Present labor shortage, if any—men—women. How do you obtain additional labor when required? If business continued normal, how many additional laborers do you estimate you could place at the end of the war, skilled—unskilled—women?

The circular has been sent to boards of trade, agricultural societies, steam and electric railway companies and the larger industrial concerns throughout Canada. It is the company's intention, after receiving replies, to compile the information in the form of graphic charts and maps which will show at what points congestion would seem most likely to occur by the influx of returned soldiers and others after the war, so that some means may be taken to avert such congestion and relieve the situation.

Government Elevator at St. John, N.B.—The contract for the construction of the Dominion Government grain elevator at St. John, N.B., has been awarded to the Fegles-Bellows Engineering Co., Fort William, Ont., and the contract for the concrete foundations to Engineers & Contractors, Ltd., St. John, N.B. This elevator will be the complement of the Dominion Government elevator at Transcona, Man., and will cost approximately $250,000. Its structure was designed by John S. Metcalf Co., Montreal.

Railway Lands Patented.—Letters patent were issued during November, in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary and Edmonton Ry.	1,276.00
Canadian Northern Ry	642.00
Canadian Pacific Ry grants	.45
Canadian Pacific Ry. roadbed and station grounds	81.26
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	2,474.87
Winnipeg River Ry.	8.22
Total	4,482.80

Dynamiter Horn.—The hearing of the charge against Werner Horn for alleged acts in connection with the dynamiting of the C.P.R. international bridge at Vanceboro, Me., has been fixed by the U. S. courts to open Jan. 8. The present stage of the proceedings is Horn's appeal to the Supreme Court at Washington against the dismissal of his suit for a writ of habeas corpus.

Increased Demurrage Charges Authorized by Board of Railway Commissioners.

The Canadian Pacific, Grand Trunk, Michigan Central and Toronto, Hamilton & Buffalo Railway Companies on behalf of themselves and other railway companies in Canada applied to the Board of Railway Commissioners, on Dec. 20, for an order amending General Order 1, known as "The Canadian Car Service Rules," so as to provide that the demurrage charge for each 24 hours as provided in rule 1 be increased from $1 to $4, and also that the additional free time beyond 48 hours authorized by exception (a) to rule 2 be cancelled. The reasons were stated as follows:—That a shortage of cars exists at present and there is good reason to apprehend that this will increase, due to the heavy demands upon the companies' equipment and to the fact that cars are detained by shippers and consignees for unreasonably long periods when they should be released and put back into service. That the congestion of cars interferes seriously with the speedy conveyance of war munitions and thereby constitutes very serious danger. That the present charges provided under the Canadian Car Service Rules are so low as not to offer any inducement to shippers and consignees in their own interest to load and unload cars as speedily as possible, and it is the opinion of the applicant companies largely due to the neglect of shippers and consignees to do so that the car shortage does and will exist. That under the present scale of charges it often much cheaper for shippers and consignees to retain cars in their possession, using them as temporary warehouses, and for the purpose of distributing freight therefrom in small quantities, instead of providing proper warehouse facilities or utilizing public warehouses for storing freight. That such improper use of the companies' equipment is most pronounced and the consequent congestion most severe in large terminals. That the value of a freight car to a railway company under normal conditions is much greater than the daily amount which it is allowed to collect as demurrage, and such value becomes much greater in times such as the present, when the companies' facilities and equipment are taxed to their fullest capacity. Moreover, in large terminals, the track space actually occupied by a car is of very great value in itself, and consequently must and should be used to its maximum capacity, in the interests of all shippers and consignees, rather than that its use should be restricted by the improper detention of cars in the interests of one shipper or consignee. That this application is not made because the companies wish to collect increased demurrage charges, but solely with a view to compelling shippers and consignees to permit all available rolling stock to remain in active service continuously, or as nearly continuously as possible, and consequently to facilitate the expeditious handling of freight generally.

The Board's Judgment.

The application was heard by the Board in Toronto, Dec. 11 and 12, and, on Dec. 23, the Chief Railway Commissioner, Sir Henry Drayton, gave the following judgment:—At the Board's request, the many shippers and shipping associations represented at the hearing met the railways in an effort to arrive at an agreement. On the following day the shippers' associations, with the exception of the Toronto Retail Coal Dealers' Association and the Lumbermen's Associations, reported that they had arrived at an agreement with the railways, as a result of which the present application was abandoned, that the free time of 48 hours should be allowed after cars had been spotted for unloading and that at the expiration of this free time the charge should be $1 for the 1st day's default, $1 for the 2nd, $3 for the 3rd, and $5 for the 4th and each succeeding day; computation of the free unloading time of 48 hours to be from 7 a.m. of the day following the day on which placement, actual or constructive, had been effected. In order to give effect to the arrangement, the following changes must be made:—

Rules 1, 2, 5 and 15 of the Canadian Car Service Rules are suspended in their entirety from Jan. 1 to Apr. 30, 1917, both inclusive, and the following rules bearing the same numbers are submitted. Rule 11 is also suspended for the same period.

Rule 1.—When cars are held under load, or awaiting loads, beyond the free time allowed by rule 2, for any reason for which the consignee or shipper is responsible, the following tolls for each day of 24 hours, or any part thereof, shall be charged to, and paid by, the shipper, consignee or other party responsible therefor, in addition to all other tolls paid, or payable, in respect of the goods carried, or to be carried, in or on each such car, viz.: For the 1st day $1, for the 2nd day $1, for the 3rd day $3, for the 4th and each succeeding day $5.

Rule 2.—(a) After notice of arrival of a car at its destination, or in the outside break-up or sorting yard, if such be used for the purpose, all consignees shall be allowed 24 hours within which to pay the tolls or charges (if any), to give order for special placing or delivery if such orders be necessary, and for customs entry of freight in bond. If more than 24 hours be used for these purposes, the excess time shall be deducted from the succeeding unloading period, except as provided in rule 15. (b) Forty-eight hours free time shall be allowed for loading or unloading all commodities, computed from 7 a.m. of the day following the day on which the actual or constructive (see rule 13) placement has been effected, provided that any portion of such placement day may be utilized by the shipper or consignee, in addition to the said 48 hours, without charge. Exceptions:—(a) Five days free time shall be allowed at Montreal and at tide-water ports for unloading lumber and hay for export. (b) In the portion of Canada in which the Canada Grain Act prescribes a specified time for loading grain the said act shall apply. (c) If the destination is not a port of entry, 48 hours shall be allowed for clearance of customs at the outside port of entry.

Rule 6.—If wet or inclement weather, according to local conditions, renders loading or unloading impracticable during business hours, or exposes the goods to damage, the time allowance shall be extended so as to give the full free time of suitable weather. But if the parties neglect or fail to avail themselves of the herein authorized free time of suitable weather, they shall not be allowed additional free time by reason of such neglect.

Rule 15.—If after arrival at destination a car is reconsigned under switching arrangements, the original consignee alone shall have 24 hours in which to give order for placing or delivery, and he shall pay the tolls prescribed in rule 1 for all time in excess of the 24 hours, so that the final free time allowed by rule 2 (b) shall still remain to the party who accepts delivery.

Both the Toronto Retail Coal Dealers' Association and the lumber shippers objected to the settlement arrived at, insisting in each case that 3 days free time should be allowed for unloading. The settlement arrived at has since been taken up with the boards of trade in the west and the western section of the Canadian Manufacturers' Association. The boards of trade of Wininpeg, Saskatoon, Calgary, Regina, Edmonton, Lethbridge, Vancouver and Fort William concur in the arrangements made, some of the boards suggesting that the demurrage rates should be even higher, in order that rolling stock may be kept constantly in service, as is urgently required. The Board i sof the view that notwithstanding the objections raised by the protesting associations, the settlement arrived at must be adopted.

In so far as coal is concerned, it well may be that large cars of coal unloaded by hand cannot be released under certain conditions within 48 hours; but as a matter of fact, under the settlement arrived at, in most instances, more than 48 hours will be available, as free time does not commence until 7 a.m. of the day after the car has been spotted, and apart from this ,the settlement after all only imposes upon the local coal dealers without proper facilities a penalty of $1 for the 3rd day, or about 2c. a ton. The coal situation at present is one of peculiar difficulty, the traders complaining of lack of deliveries, and of embargoes against the movement of coal into Canada placed by U.S. carriers who object to the free use of their cars in Canada for a longer time than consignees are allowed in their own territory. It must be borne in mind that all of the coal delivered in Toronto—which is the only place to protest—originates in U.S. mines, and is hauled to a very large extent in U.S. cars. A much larger proportion of the coal brought into Toronto is unloaded mechanically than is unloaded by hand, but in any event, in the public interest, the settlement must be given effect to and the movement of coal facilitated, even if local Toronto dealers are penalized an extra 2c. a ton for the 3rd day coal cars may be held.

In so far as the lumber situation is concerned, it well may be that certain lumber merchants will be unable to unload within 48 hours. The admission, however, of a protesting shipper, Mr. Rutherford, of Montreal, that with 2 teams and 4 men a large car can be unloaded in 8 hours, robs the protests of much force which they otherwise might have. It is quite true that this unloading is predicated upon a proper yard, and proper facilities, and easy access to the tracks. It is also quite true that some consignees have not these facilities, and have not lumber yards conveniently placed. However, the absence of these facilities cannot be made a justification at present for a refusal to put into effect regulations accepted by a majority of Canadian shippers and calculated to assist traffic conditions at a time of great emergency. The whole issue is merely as to whether the lumber merchant shall have, or shall not have, an extra day. If he does not get the 3rd day he is merely charged $1, which amounts to a small sum per thousand feet.

The settlement after all is only temporary. It was agreed to by the shippers, not because the railways were entitled to any increased demurrage not because the railways were not themselves in large part responsible for delays in transportation owing to lack of motive power and cars, but because it was felt that the increased demurrage fee was the only practical way in which a real public emergency resulting from shortage of cars could be in some degree relieved. The reciprocal "per diem" allowance, so called, which is paid one railway company by another for the use of its cars while on the tracks of the paying company has been increased by agreement amongst the railway companies, from 45c. to 75c. a day per car, with the proposal of a further increase if necessary to attain the object in view. In addition to this per diem allowance, the railway companies have agreed that the company having possession of the car shall pay a penalty of $5 a car if it moves it in a direction away from the lines of its owner when available for the return movements. This $5 charge is made in cases where the company having possession of the car notifies the owning company of the diverted movement. If the car is so moved and the owning company is not notified, the penalty is $10.

The agreement arrived at between the shippers and the railways was that increased tolls should go into effect on Dec. 20, but owing to the fact that the matter has had to be delayed by the Board in order to obtain the views of the western shippers, the increased tolls will go into effect on Jan. 1, 1917. They must cease on the close of business of Apr. 30, 1917. It should also be understood that this increase is not a retroactive increase. On Jan. 1, when the new schedule comes into effect, there will undoubtedly be many cars which have been held for an undue time by consignees; the tolls now prescribed will only apply to defaults taking place on and after Jan. 1. In like manner the tolls on cars already subject to demurrage on Apr. 30, when the higher tolls cease, will be reduced on May 1 to the old basis.

A further question arises as to the calculation of demurrage on the new scale at Cartier and other points where stop-over privileges are allowed. The present scale, based on the present demurrage plus the track storage chargeable at these detention points is as follows:—

		Demurrage.	Track Storage.	Total.
24	hours	..	..	..
28	"	$1	..	$1
72	"	2	..	2
96	"	3	$1	4
120	"	4	2	6
144	"	5	4	9
168	"	6	6	12

The railways ask that the following schedule be adopted:—

		Demurrage.	Track Storage.	Total.
24	hours	$1	..	..
48	"	$1	..	$1
72	"	2	..	2
96	"	5	$1	6
120	"	10	2	12
144	"	15	4	19
168	"	20	6	26

The railways urge in support of their application the fact that a rate higher than the rate which they ask has been allowed by the Interstate Commerce Commission, as follows:—

		Demurrage.	Track Storage.	Total.
24	hours	..	..	..
48	"	$1	..	$1
72	"	3	..	3
96	"	6	$1	7
120	"	11	2	13
144	"	16	4	20
168	"	21	6	27

Full consideration has been given the different schedules and the measure of traffic, and the Board is of opinion that the proper charge during the priod of increased tolls, including both demurrage and track storage should be as follows:—

24	hours	..
48	"	$1
72	"	2
96	"	5
120	"	10
144	"	15
168	"	20

Subject to a further increase of $5 for each successive 24 hours.

General order 174 was passed Dec. 23, putting the new demurrage rules into effect in accordance with the judgment, which was concurred in by the Assistant Chief Commissioner, D'Arcy Scott, and Commissioner McLean.

Railway Finance, Meetings, Etc.

Algoma Central & Hudson Bay Ry.—Theer has been deposited with the Secretary of State at Ottawa, a supplemental trust deed, dated Oct. 31, 1916, between the company and the United States Mortgage & Trust Co. and the Lake Superior Corporation, affecting the terms of a mortgage and deed of trust, dated July 1, 1910, and also a supplemental agreement, dated Mar. 14, 1916, and a second mortgage supplemental agreement, dated Oct. 31, 1916, between the same parties, affecting the terms of a mortgage and deed of trust, dated Aug. 14, 1914.

Algoma Eastern Ry.—There has been deposited with the Secretary of State at Ottawa an agreement, dated Nov. 8, 1916, between the company and the Lake Superior Corporation relative to the purchase of rolling stock.

Canadian Pacific Ry.—It is reported that the German submarine vessel, Deutschland, on her recent trip to New London, Conn., brought over a considerable number of certificates of C.P.R. stock owned in the German Empire, which have been placed upon the New York market for sale.

Canadian Northern Ry.—Lazard Bros. & Co., London, Eng., are prepared to purchase £75,000 of C.N.R. 4% first mortgage land grant bonds at 93, a brokerage of ½% being paid to authorized agents. The offer is liable to be withdrawn at any time without notice.

Central Vermont-Southern New England Rd.—Attachments have been filed in the Registry of Deeds of Hampton County, Mass., by John Marsch, of Chicago, Ill., amounting to $6,000,000. One of the attachments is against the Southern New England Rd., and the other against the S.N.E. Rd., the Central Vermont Ry., and the G.T.R. Mr. Marsch was the contractor for building the S.N.E. Rd. from Palmer, Mass., to Providence, R.I., on which work was suspended. The S.N.E. Rd. is owned by the Central Vermont Ry., which in turn is controlled by the G.T.R.

Guelph Junction Ry. — The income available for dividend for the quarter ended Sept. 30, 1916, was $11,260.50, equal to 6⅝% upon the capital of $170,000. The total amount paid to the City of Guelph, Ont., which owns the line, for the year ended Sept. 30, was $41,012.50.

Kaslo and Slocan Ry.—The Dominion Parliament is being asked to declare this railway to be a work for the general advantage of Canada, to change the head office from Field, B.C., to Montreal, and to authorize it to enter into agreements with the C. P. R.

Lotbiniere and Megantic Ry.—The hearing was started before the Court of Exchequer at Ottawa, Dec. 15, in the proceedings to fix the value of this railway, which was purchased by the Dominion Government under the terms of the act, to take over the Quebec and Saguenay Ry. and other lines. The price fixed for the line was $310,000, subject to the Court of Exchequer's valuation. The principal question before the court is the company's claim for $35,000 for the charter rights of the Quebec Eastern Ry. for which a route was survey to include the L. & M. R.

Pere Marquette Rd.—The plan for the reorganization of the P.M.R. is under consideration by the Michigan State Railroad Commission. It provides for the issuance of new securities amounting to $90,000,000 which with securities which the road is said to own will bring the capitalization of the new company up to $105,000,000, and it is claimed that after the various indebtednesses, which are nearly all of long standing, have been wiped off, there will be a cash balance of $16,000,000. The company owns or controls the Lake Erie & Detroit River Ry. in Canada and leases running rights over the Michigan Central Rd. lines in Canada from St. Thomas to the Niagara frontier.

Spokane International Ry.—Referring to the reported purchase of this railway in our last issue, D. C. Corbin, President, is reported to have said that it has been acquired by the C.P.R. and the latter's subsidiary, the Minneapolis, Saint Paul & Sault Ste. Marie Ry. jointly from him and his associates. The bonded indebtedness of the line with the Coeur d'Alene and Pen d'Oreille branches is $4,744,000, and the outstanding debt is $4,200,000.

Temiscouata Ry.—Gross earnings for September, $16,588; operating expenses, $15,365; net earnings, $1,223. Aggregate net earnings for three months ended Sept. 30, $11,725.

Wellington Colliery Ry.—The British Columbia Minister of Railways has consented to the increase of the company's capital from $50,000 to $500,000 by the issue of 450,000 new shares of $1 each, and has defined the company's borrowing powers at $500,000 and approved the issue of debentures and other securities covering the company's line, which is 21 miles long.

A general meeting of shareholders was called to be held in Victoria, Dec. 15, to authorize the directors to issue bonds or other securities for $500,000, secured by mortgage upon the whole or any part of the company's undertaking, franchises, etc., and to authorize the directors to carry out the terms of an agreement made between the Canadian Collieries (Dunsmuir), Ltd., and the company, dated June 12, 1916. This agreement conveys to the Wellington Colliery Ry. Co. certain properties consisting of the right of way of the railway, the railway constructed thereon, and the railway equipment and rolling stock at a price fixed by valuation, and the issuance to the Canadian Collieries (Dunsmuir), Ltd., the $500,000 of bonds or other securities to be issued and sufficient paid up shares of the company's stock in payment for the same. H. Browning is Secretary of the W.C.R. Co.

White Pass & Yukon Ry.—The accounts for the year ended June 30, show a loss of £14,107, after charging interest on debenture stock and debentures payable in income debenture stock. This increases the debit balance on profit and loss account to £24,675. For the previous year there was a loss of £26,182.

Mainly About Railway People Throughout Canada.

G. McLaren Brown, European Manager, C.P.R., arrived in Canada, Dec. 9, from England, on a business trip.

Corporal R. R. Hutchison, who has received the Military Medal for bravery on the field, is a son of **Dr. J. A. Hutchison,** Chief Medical Officer, G.T.R., Montreal.

N. P. Dalziel, formerly of Mackenzie, Mann & Co.'s engineering staff, Toronto, and now with the Imperial Munitions Board, Ottawa, has gone to England on official business.

L. E. Silcox, formerly Division Engineer on the Dominion Government Railway to Hudson Bay, and stationed at Kettle Rapids, Man., is now with the Canadian Engineers on active service.

W. M. Acworth, who was appointed a member of the board to enquire into the Canadian railway situation, in place of Sir George Paish, arrived in Canada, Dec. 9, to consult with the other members of the board.

A. J. Gayfer, until recently Division Engineer, Canadian Northern Ry., Hornepayne, Ont., is at present serving in the No. 2 Construction Battalion as a Captain, and is stationed at Edmonton, Alta., preparatory to going overseas.

Jas. Dunsmuir, director, C.P.R., has given $7,500 to Canadian Red Cross Society's Victoria City and District Branch to cover the cost of an operating theatre in the hospital which the society is presenting to France.

Lieutenant Arthur Dean, 10th Royal Lancashire Fusiliers, who has been killed in action, had been in G.T.R. service for about 10 years, serving in the Freight Department at Glasgow, Liverpool and London, respectively.

Lieut. R. C. Young, formerly Superintendent, Canadian Northern Transfer Co., Montreal, has been appointed acting Quartermaster, First Reinforcing Company, 5th Royal Highlanders of Canada, and is on active service.

George Bury, Vice President, C.P.R., arirved in England, Dec. 21, to see his son, Major G. A. E. Bury, Deputy Assistant Quartermaster General of the Training Division, C.E.F. He was accompanied by Mrs. and Miss Bury.

G. F. P. West, heretofore Assistant Superintendent of the Line, London & Southwestern Ry., England, has been appointed Superintendent of the Line, succeeding Henry Holmes, M.V.O., who has retired after many years service.

Miss Myra Goodeve, daughter of A. S. Goodeve, member of the Board of Railway Commissioners for Canada, has been decorated with the Royal Red Cross by the King, in recognition of her nursing work in France, the Dardanelles and Salonika.

Roy Smith, secretary to the General Manager, Canadian Government Railways, Moncton, N.B., has his shoulder blade broken recently, when the horse attached to the vehicle in which he was driving to business, bolted and threw him out.

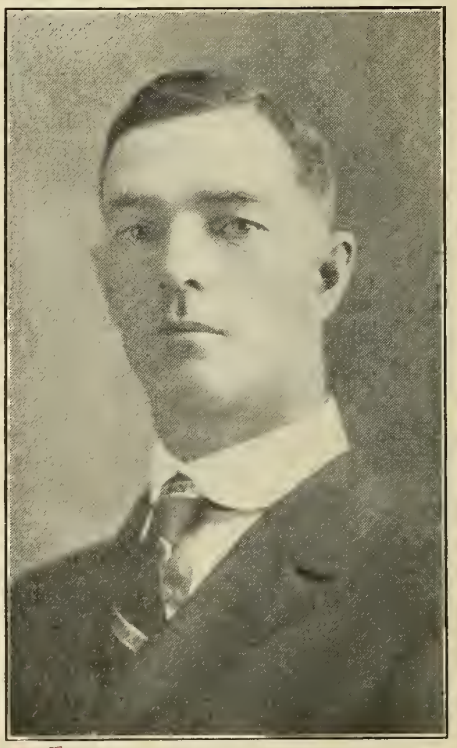
George Bury, Vice President, C.P.R., has been made a Knight of Grace of the Order of St. John of Jerusalem; and A. D. MacTier, General Manager, Eastern Lines, C.P.R., and W. D. Robb, Superintendent of Motive Power, G.T.R., have been made esquires of the same order.

W. H. Moore, Secretary, Canadian Northern Ry., has appealed against an assessment of $13,500 on income in Toronto, on the ground that while he has a house there, it belongs to his wife, and that he lives on his farm in Pickering Tp. the greater portion of the year.

Mrs. Sinclair, wife of Angus Sinclair, railways contractor, Toronto, who died there recently, left an estate of $24,730. As she had not made a will one third the estate goes to her husband, the remainder being equally divided between six sons and daughters.

Robert Home Smith, who has been elected President, Algoma Central & Hudson Bay Ry., was born at Stratford, Ont., July 12, 1878. He is also President of the Mexico North Western Ry., and a member of the Toronto Harbor Commission. He is located in Toronto.

W. D. Davidson, whose appointment as Superintendent, Detroit Division, West-



E. W. Delano
Division Engineer, Lake Superior Division, Canadian Northern Railway.

ern Lines, G.T.R., Detroit, Mich., was announced in our last issue, was presented with a travelling bag and equipment, and a leather upholstered chair, at the end of November, on leaving London, Ont., where he had been Superintendent.

Sir C. Rivers Wilson, K.C.M.G., formerly President, G.T.R., who died about a year ago, left the material for a book, "Chapters From My Official Life," which has been edited by Eva MacAllister, and published recently. The chapter dealing with the G.T.R. is of special interest to Canadian readers.

A. Rankin, a railway contractor, who built some sections of the Canadian Northern Ry. and the Grand Trunk Pacific Ry. in the west, returned to Vancouver, B.C., recently, after having spent some months in studying railway conditions in Russia with a view to acquainting himself with the opportunities for new construction.

C. Forrester, whose appointment as Superintendent, London Division, Ontario Lines, G.T.R., London, Ont., was mentioned in our last issue, was presented with a club bag and a silver framed address, and Mrs. Forrester was presented with a travelling companion, by the Stratford Division staff, Dec. 2, on leaving for London.

Lord Shaughnessy is mentioned as a possible member of a commission to administer the City of Montreal's affairs. The Quebec Legislature has decided that such a commission cannot be appointed until a referendum is taken in September to settle the question as to whether the board of control system shall be abolished or not.

F. P. Brady, General Superintendent, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., who is on leave of absence through illness, underwent an operation at Rochester, Minn., Dec. 2, for intestinal trouble, which proved entirely successful. At the time of writing he is still in Rochester, but is expected to return to his home in Winnipeg early in the New Year.

Wm. Iball, who was appointed Chief Engineer of Power House, Canadian Government Railways, Transcona, Man., recently, to succeed T. Turner, deceased, who was o nactive service in the Canadian Expeditionary Force for about two years and having been wounded returned to Canada in November. He was formerly Assistant to Chief Engineer, Power House, Transcona.

George C. Cahan, who has been appointed Assistant General Auditor, C.P.R., Montreal, was born there, Dec. 28, 1874, and entered C.P.R. service in April, 1890, since when he has been, to Oct., 1891, junior clerk, Auditor of Freight and Telegraph Receipts' office; Oct., 1891, to Aug., 1896, junior clerk, Auditor of Disbursements' office; Aug., 1896, to Dec. 1, 1916, clerk, bookkeeper and chief clerk, successively, in Comptroller's and General Auditor's offices, all at Montreal.

J. B. Lambkin, who was in the Passenger Department, Canadian Government Railways, for several years, and latterly had been in charge of the transportation of enemy aliens under the internment regulations, has been appointed transportation officer under the Military Hospitals Commission, to superintend the arrival of wounded Canadian soldiers, and to make arrangements for their removal to their various destinations.

Horace McEwen, whose retirement from active service, after 41 years and 8 months service with the Prince Edward Island Ry., was announced in our last issue, was born at St. Peters, P.E.I., Apr. 27, 1852, and entered P.E.I.R. service May 14, 1875, since when he was, to Dec., 1891, station master, Mount Stewart; Dec. 20, 1891, to Feb. 1, 1892, assistant dispatcher, Charlottetown; Feb. 1, 1892, to Apr. 30, 1912, dispatcher, Charlottetown; May 1, 1912, to Nov. 1, 1916, Superintendent, Charlottetown.

C. R. Needs, of Galt, Ont., formerly a resident engineer on the Canadian Northern Ry., and latterl ya munitions inspector, is reported to have enlisted in the Canadian Aviation Corps and to have left for England. He was employed by Mackenzie, Mann & Co., Ltd., on construction as follows:—Oct. 24, 1910, to Apr. 1, 1911, draughtsman; April 2, 1911, to May 1, 1911, rodman; May 2, 1911, to June 22, 1911, instrument man; June 23, 1911, to Aug. 14, 1911, rodman; Aug. 15, 1911, to Nov. 21, 1913, Resident Engineer.

C. Norman Ham, who has been appointed Secretary, Express Traffic Association of Canada, Montreal, was born at Winnipeg, Oct. 21, 1884, and entered transportation service in Feb., 1902, since when he has been, to Apr., 1902, clerk, General Baggage Department, C.P.R., Montreal; May 1, 1902, to Oct. 1, 1904, stenographer, Geenral Freight Department, Intercolonial Ry., Montreal; Oct. 3, 1904, to Oct. 30, 1908, statistical clerk, Traffic Department, Board of Railway Commissioners, Ottawa; May 1, 1904, to Apr. 30, 1910, percentage clerk, Freight Tariff Bureau, C.P.R., Montreal; May 1, 1910, to Nov. 30, 1916, chief clerk, Traffic Department, Dominion Express Co., and Western Express Co., Toronto.

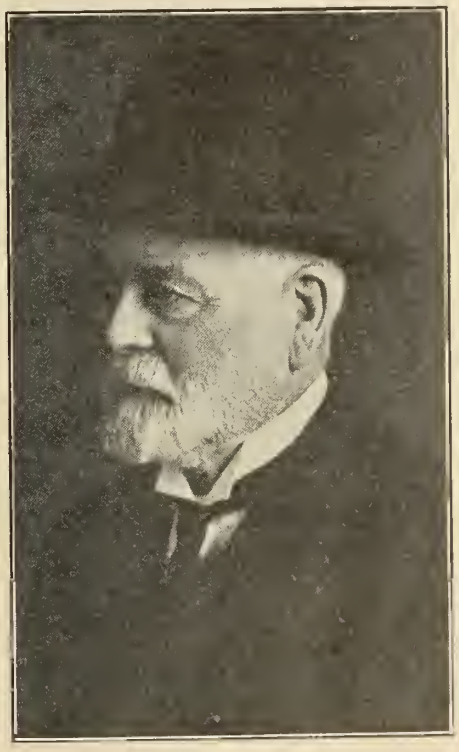
M. K. McQuarrie, who has been appointed Engineer, Dominion Atlantic Ry., Kentville, N.S., was born at Sault Ste. Marie, Ont., Aug. 17, 1884, and entered railway service in 1905, as transit man in the Resident Engineer's office, C.P.R., Vancouver, B.C. He graduated from the School of Practical Science, University of Toronto, in 1907, since when he has been, to 1909, transit man on Nicola-Penticton survey, and in charge of revised location of a portion of the Esquimalt & Nanaimo Ry.'s Nanaimo-Alberni extension; 1909 to Dec. 31, 1910, Assistant Engineer, C.P.R., Vancouver, B.C.; Dec. 31, 1910, to Dec. 4, 1916, Resident Engineer, Revelstoke Division, British Columbia District, C.P.R., Revelstoke.

Julius Pearson Mader, who has been appointed General Freight and Passenger Agent, Algoma Eastern Ry., Sudbury, Ont., was born at Newmarket, Ont., and entered railway service in Sept., 1906, since when he has been, to Apr., 1909, clerk, G.T.R., Newmarket, Ont.; Apr. to Nov., 1909, clerk and car checker, G.T.R., Collingwood, Ont.; Nov., 1909, to July, 1910, Local Freight Office, G.T.R., North Bay, Ont.; July, 1910, to Mar., 1912, chief clerk to Division Freight Agent, C.P.R., North Bay, Ont.; Mar., 1912, to Jan., 1913, clerk, Freight Tariff Bureau, C.P.R., Montreal; Jan. to Dec., 1913, chief clerk to General Freight and Passenger Agent, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont.; Dec., 1913, to Dec., 1916, General Agent, A.C. & H.B.R. and Algoma Eastern Ry., Sudbury, Ont.

Thomas Francis Rahilly, who has been appointed Comptroller, Algoma Eastern Ry., Sudbury, Ont., was born at Diorite, Mich., Oct. 6, 1892, and entered railway service June 22, 1908, since when he has been, to July 20, 1908, section hand, Chicago & North Western Ry., Michigamme, Mich.; July 23, 1908, to May 11, 1913, freight clerk, Duluth, South Shore & Atlantic Ry., St. Ignace, Mich.; May 12 to Aug. 27, 1913, clerk in Audit Office, same road, Marquette, Mich.; Aug. 28 to Nov. 2, 1913, chief clerk to Yardmaster, Sault Terminals, same road, Sault Ste. Marie, Ont.; Nov. 3, 1913, to Nov. 30, 1914, clerk in Comptroller's Office, Algoma Central & Hudson Bay Ry. and Algoma Eastern Ry., Sault Ste. Marie, Ont.; Dec. 1, 1914, to Apr. 15, 1916, Travelling Auditor, same companies; Apr. 15 to Dec. 1, 1916, Trainmaster, A.C. & H.B.R., Sault Ste. Marie, Ont.

Hon. Robert Mackay, who died at Montreal, Dec. 21, aged 77, was connected with several transportation and allied companies. Among them were:—Montreal, Light, Heat & Power Co., Quebec Ry., Light, Heat & Power Co., Dominion Iron & Steel Co., Dominion Coal Co., Dominion Transport Co., St. Maurice Construction Co., Shedden Forwarding Co., Western Coal & Coke Co., Port Hood-Richmond Coal & Ry. Co., Canada Cement Co., Canadian Pacific Ry., Bank of Montreal, Bell Telephone Co., Lake of the Woods Milling Co., Pacific Pass Coal Fields Co., Shawinigan Water & Power Co., etc. He was Chairman, Montreal Harbor Commissioners, from 1886 to 1907; President, Montreal Board of Trade, 1900-01. He was made a Senator in 1901.

J. A. DeWolfe, who has been appointed Trainmaster, Portage Division, Manitoba District, C.P.R., Winnipeg, was born at Woodstock, Ont., Aug. 31, 1884, and entered railway service July 10, 1899, since when he has been, to Apr. 16, 1900, stenographer to Locomotive Foreman, G.T.R., London, Ont.; Apr. 17, 1900, to May 12, 1903, not in railway service; May 13 to June 23, 1903, clerk to Car Foreman, C.P.R., Toronto; June 23, 1903, to May 22, 1905, clerk in Trainmaster and Superintendent's offices, C.P.R., London, Ont., and Toronto; May 22, 1905, to May 7, 1907, clerk to Manager of Construction,



Robert Kerr.

C.P.R., Toronto; May 7, 1907, to June 21, 1909, Secretary to General Manager, C.P.R., Montreal; June 23 to Aug. 24, 1909, assistant chief clerk, Second Vice President's office, C.P.R., Winnipeg; Aug. 24, 1909, to Dec. 31, 1914, chief clerk, Engineering Department, Western Lines, C.P.R., Winnipeg; Dec. 31, 1914, to Oct. 31, 1916, chief clerk to Vice President and General Manager, Western Lines, C.P.R., Winnipeg.

J. Mitchell Silliman, who has been appointed Resident Engineer, London Division, Ontario District, C.P.R., London, was born at Easton, Pa., Sept. 8, 1885, and graduated from Lafayette College, Easton, Pa., with the degree of C.E., in June, 1907, since when he has been, to Aug., 1907, leveller right of way survey, Atlantic Division, C.P.R.; Aug. to Dec., 1907, transit man, District 2, Atlantic Division, C.P.R.; Jan. to Apr., 1908, rodman, reconnaissance surveys, Lake Superior Division, C.P.R.; May, 1908, to Oct., 1909, transit man, District 1, Atlantic Division, C.P.R.; Nov., 1909, to Mar., 1910, transit man, District 1, Lake Superior Division, C.P.R.; Mar., 1910, to Mar., 1911, transit man, District 3, Lake Superior Division, C.P.R.; Mar., 1911, to Sept., 1912, Resident Engineer, Construction Department, Guelph Jct.-Hamilton Line, C.P.R.; Sept., 1912, to Mar., 1915, Resident Engineer in charge of construction, Forsyth St. Branch, C.P.R., Montreal; Mar. to Dec., 1915, District Engineer of Construction in charge of Lake Erie & Northern Ry., Brantford, Ont.; Jan. 1 to Nov. 28, 1916, Resident Engineer, Laurentian Division, Quebec District, C.P.R., Montreal.

James Russell, who was appointed Vice President and General Manager, Minneapolis & St. Louis Rd., Minneapolis, Minn., recently, was born Feb., 1865, and commenced railway work in 1879 with the G.T.R., being employed as agent and operator until 1882 and in 1883 he worked as operator for the Chicago, St. Paul, Minneapolis & Omaha Rd., the Kansas Pacific Rd., and the Atchison, Topeka & Santa Fe Ry. From 1883 to 1887, he was operator and dispatcher, Canada Southern Ry. and Michigan Central Rd., and subsequently was dispatcher, chief dispatcher and Superintendent, successively, St. Paul, Minneapolis & Manitoba Ry., and Great Northern Ry. In 1903 he was appointed Superintendent, Missouri Pacific Rd., and in 1907 transferred in the same capacity to the Chicago, Burlington & Quincy Rd. From 1908 to Jan. 1, 1914, he was General Superintendent, Spokane, Portland & Seattle Rd., and from an. 1 to Apr. 1, 1914, was General Superintendent, Great Northern Ry., and then went to the Denver & Rio Grande Rd. as Assistant to the Vice President. Later on he became General Manager, which position he resigned to take up his present appointment.

Robert Kerr, formerly Passenger Traffic Manager, C.P.R., died at Toronto, Dec. 9. He was a son of Capt. Robert Kerr, a well known lake captain on the old Royal Mail and other lines, and who is still remembered in Toronto as commanding the Admiral, Gore, Burlington and Maple Leaf. He was born at Toronto, Aug. 23, 1845, and was educated at Upper Canada College, graduating in 1856. He served for a time in the regular U.S. army, Battery A, 2nd U.S. Artillery. He returned to Toronto in 1861, and was a member of No. 3 Company, Queen's Own Rifles. He entered railway service in 1866, since when he was, to 1879, warehouse clerk, etc., Northern Ry. of Canada; 1879, Through Freight Agent, same road; 1879 to 1884, General Freight and Passenger Agent, Northern & Northwestern Ry.; June 1, 1884, to Jan. 1, 1896, General Freight and Passenger Agent, Western and Pacific Divisions, C.P.R., Winnipeg; Jan. 1, 1896, to June, 1899, Traffic Manager, Lines West of Lake Superior, C.P.R.; June, 1899, to Cept., 1910, when he retired on superannuation, Passenger Traffic Manager, Montreal. The funeral took place at Toronto, Dec. 11, and was attended by a number of representatives of the C.P.R. and other transportation companies. The pall bearers were:—C. E. E. Ussher, Passenger Traffic Manager, C.P.R., Montreal; W. G. Annable, General Passenger Agent, Atlantic Service, Canadian Pacific Ocean Services, Ltd., Montreal; Wm. Davidson, Manager of Marlatt & Armstrong Co., Ltd., leather merchants, Montreal; David Henderson, barrister; P. d'Eyncourt Strickland, and W. Cecil Lee, Toronto.

Walter Reginald Baker, C.V.O., Secretary of the C.P.R. Co., and Assistant to the President, who has, at his own request, been relieved of his duties and placed on the retired list, and whose per-

rait appears in this issue, was born at York, Eng., May 25, 1852. From Nov., 1865, to Oct., 1872, he was with the Allan Line Steamship Co.; Nov., 1872, to Oct., 1873, Local Freight and Passenger Agent, Canada Central Ry., Ottawa; May, 1874, to July, 1877, Private Secretary and Comptroller to the Earl of Dufferin, Governor General; July, 1877, to Feb., 1881, Assistant Secretary, Treasury Board, Ottawa; Feb., 20, 1881, to Jan., 1882, Local Treasurer and Assistant to General Superintendent, Western Division, C.P.R., Winnipeg; Jan., 1882, to June, 1883, Purchasing Agent, Western Division, and Assistant to General Manager, C.P.R., Winnipeg; June, 1883, to Aug. 31, 1892, General Superintendent, Manitoba & Northwestern Ry., Portage la Prairie and Winnipeg; Sept. 1, 1892, to May, 1900, General Manager, Manitoba & Northwestern Ry., Winnipeg; May, 1900, to June, 1901, Executive Agent, C.P.R., Winnipeg; June, 1901, to Aug. 31, 1905, Assistant to Vice President, C.P.R., Montreal; Sept. 1, 1905, to Feb., 1908, Assistant to President, C.P.R., Montreal; Mar. 1, 1908, to Dec. 31, 1916, Assistant to President and Secretary to Company, C.P.R., Montreal. On leaving Winnipeg for Montreal in 1901 he was presented with a solid silver service by the business community "in recognition of the integrity, unfailing courtesy and great ability displayed by him as an official and as a public-spirited citizen." He had charge of the royal trains over the C.P.R. lines during the several visits of the Prince and Princess of Wales (now King George and Queen Mary), Prince Arthur of Connaught and Prince Fushimi, and of several tours of the Duke and Duchess of Connaught from 1912 to 1916, and was presented with handsome testimonials from each of these personages, as well as from the late King Edward VII., in acknowledgment of his and the company's services and attentions to the illustrious visitors. He was decorated with the 3rd class of the Order of the Sacred Treasurer by the Emperor of Japan, 1906; appointed an Esquire of the Order of St. John of Jerusalem, 1910; appointed Commander of the Royal Victorian Order, June, 1911. Married Jane Helen Cruice, daughter of the late R. W. Cruice, Ottawa, 1875 (deceased May, 1902); secondly, Belle Drysdale Paton, daughter of the late Andrew Paton, Sherbrooke, Que., Oct., 1907 (deceased June, 1908); thirdly, Elsa Dicke, Vienna, Austria, Dec., 1909. He is a member of the following clubs:—Mount Royal, Royal Montreal Golf, Montreal Jockey, Rideau, Ottawa Country, and Manitoba. He expects to go to England at an early date for a short visit and will probably, with Mrs. Baker, leave in March for Japan and China.

Grand Trunk Pacific Ry. Suit.—An action has been brought in a Manitoba Superior Court involving the Grand Trunk Pacific Ry., the G. T. P. Development Co., and the Transcontinental Townsite Co., and affecting the purchase of townsites and right of way for the G.T.P.Ry. branch lines in Saskatchewan and Alberta, and the obtaining of an area of land from the Dominion Government. The claims made amount to $761,174.22, and there is a counterclaim of $2,025,000.

T. McHattie, who resigned his position as Master Mechanic, Eastern Lines, G.T.R., Montreal, recently, on account of ill health, in remitting his current subscription, writes,—"The Railway and Marine World is always received with much pleasure, for the splendid information which it contains from month to month."

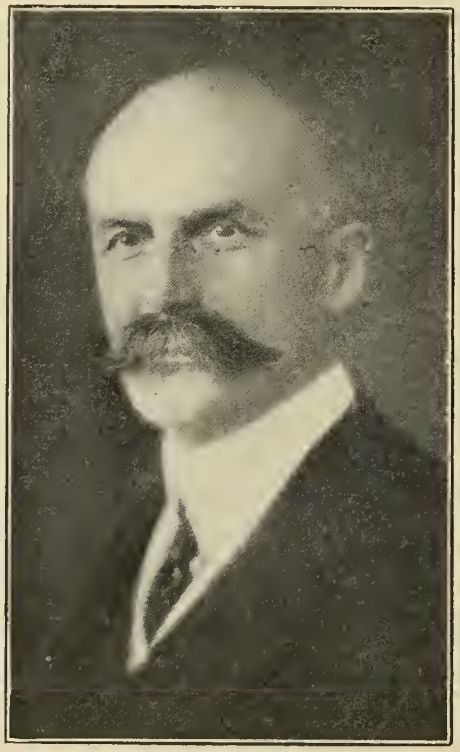
Freight and Passenger Traffic Notes.

The Pacific Steamship Co. has reduced the round trip fares between Victoria, B.C., and San Francisco, Col., to $32.50.

The C. P. R. on Dec. 10 put on a standard sleeping car between Montreal and Grand Mere, Que., leaving Montreal at 11.55 p.m. daily, and Grand Mere, at 7 p.m. weekdays, and 4.30 p.m. Sundays.

The Pacific Steamship Co., in order to relieve the freight situation in the Pacific coast, has increased its service by putting on two freight steamships on the run between Seattle, Wash., Victoria, B.C., and Californian ports.

On the Dominion Government Ry. to Hudson Bay a weekly train service with sleeping car accommodation is being operated from Pas, Man., to the end of track at Kettle Rapids, 332 miles, within 93 miles of the terminus at Port Nelson, on Hudson Bay.



Walter R. Baker, C.V.O.

The Canadian Northern Ry. has made some alterations in the dining car tariff on its trains. Club breakfasts will be served at 25c, 50c, 65c and 80c; luncheons at 50c, 70c, 80c, and $1, and dinners at 50c, 75c, 85c, and $1. An a la carte service is also given.

The C. P. R. proposes to feature Vancouver and the Pacific Northwest as a holiday resort both for summer and winter visitors. The tourist possibilities of this district were explained to the C.P.R. officials at the recent conference at Winnipeg by H. Cuthbert, Industrial and Publicity Commissioner, Victoria, B.C., and Secretary of the North Pacific Tourist Association.

The White Pass & Yukon Ry. has announced that for next season the fares for all round trip tourist trips will be raised as follows: To Atlin and return, from $100 to $110; to Dawson and return, from $160 to $170; to Fort Yukon and return, from $200 to $215; to Fairbanks and return, from $250 to $255. The excursion known as the Grand Tour, which includes a trip down the Yukon and to St. Michael and Nome, will cost $305, against $300 this year.

The Pacific Great Eastern Ry. is carrying considerable quantities of produce, timber, etc., from points between Squamish and Clinton into Vancouver, B.C. Freight is carired to Squamish by train and thence by steamship to Vancouver. A recent statement is that during the summer and autumn of 1916 the traffic to Squamish for shipment covered 4,500 live stock, 100 cars of potatoes, 300 cars of hay, about 50 cars of beans, and numerous cars of timber for piles and other construction purposes.

Decision was given recently in a Montreal Court in the action of Dacosse against the G. T. R., dismissing the suit, which was to recover $397 value of goods lost in transit between Montreal and Winnipeg. The plaintiff shipped some furniture by the G. T. R. from Montreal to Winnipeg, packing some articles valued at the amount claimed in the furniture. He claimed that during transit the goods had been lost or stolen. The defence was that the company has not been advised of goods having been packed in the furniture, and that they had been lost on one of the other lines over which thel were routed.

The development of the Peace River country consequent upon the coming of a railway is shown by the fact there was shipped in from Edmonton, Alta., over the Edmonton, Dunvegan & British Columbia Ry. during the first year 40,000 tons of freight and that there was shipped out about 1,000,000 bush. of grain. In previous years, when the only means of shipment was by the Canadian Northern Ry. to Athabasca Landing, and thence by water and overland routes to Groward, Peace River Landing and other points, the average shipments inwards amounted to about 1,500 tons, and practically nothing but furs came out.

Victoria business men asked Esquimalt and Nanaimo Ry. officials recently to put on an evening freight train to Nanaimo, stating that the present day service unfairly handicaps shippers. H. E. Beasley, General Superintendent, informed the representatives of the Board of Trade, who brought the matter before him, that the traffic would not justify the putting on of an evening train, but arrangements had been made so that Nanaimo merchants could get their bills of lading at 8 a.m., so that they might get their freight delivered earlier than at present. During October, he stated, the amounts collected for freight carried on the present train averaged $93.26 a a day, of which the Nanaimo freight only averaged $18.32 a day.

French Railway Earnings.—Recent reports concerning the state of French railways, which are being operated under government control, show that the earnings for August were $26,037,732 against $23,397,353 in Aug., 1915, and $15,086,-539 for Aug., 1914. The line with which these figures are concerned are the French State Railways, the Western Ry. of France, the Paris, Lyons & Mediterranean Ry., and the Paris & Orleans Ry. The Northern Ry. of France and the Eastern Ry. of France are chiefly in the territory which is, for the present, in German occupation.

The C. P. R. Colonization and Development Department has for its object the assisting of settlement on the land, and looking into the labor situation in the territory served by its lines. It is in charge of J. S. Dennis, Assistant to the President, and Wm. Pearce is Statistician.

Railway Development, Projected Lines, Surveys, Construction Betterments, Etc.

Alberta & Great Waterways Ry.—Tracklaying was expected to be completed into Fort McMurray, Alta., Dec. 31. Track was laid up to that date from Carbondale, the junction point with the Edmonton, Dunvegan & British Columbia Ry., to mileage 174.5, and at the end of June, 1916, had been laid to mileage 203. All the steel necessary to lay the track into Fort McMurray, at approximately mileage 300, had been delivered in November, when all the company's available forces were set to work in an endeavor to get it laid by the end of the year. (July, 1916, pg. 281.)

Athabasca Northern Ry.—The Dominion Parliament is being asked to declare the company's corporate powers to be in full power and effect, and to extend the time fixed for the building of the projected railway. The company was incorporated in 1905 to build a railway from Edmonton, paralleling the North Saskatchewan River to Tp. 59, R. 19, W. of 5th Meridian, thence north easterly past Smoky Lake to Lac la Biche, and thence northerly to the Athabasca River at the junction with the Clearwater River (Jan. 1915, pg. 10.)

Cascade Scenic Ry.—We are officially advised that it is expected to start construction in the spring. The line will start from near the C.P.R. station at Banff, Alta., and will run along the valley of Forty Mile Creek to the base of Cascade Mountain, there ascending the direct slope of the mountain. Its length will be 2.5 miles. The rise from the base to the summit of the mountain is 5,290 ft., and as the slope distance is a little over 11,000 ft., the angle of elevation is practically 30 degrees and the gradient 50%. The section directly ascending the mountain will consist of 4 tangents of about 2,600 ft. each. The operating devices will be at the upper end of each of these tangents. The line will be a double track one, the rails being laid in concrete at certain points, and it will be operated by a system of balanced cars. T. R. Deacon, Winnipeg, is principally interested. (Dec., 1914, pg. 424.)

Application is being made to the Dominion Parliament to incorporate a company with this title to operate a scenic or funicular railway at Banff, Alta., or elsewhere in Canada as may be permitted. The railways to be run on rails or aerial cable or otherwise as may be desired and to be operated by steam, electricity, gasoline, water power or by such other means as may be most convenient or expedient. The company's office is to be at Winnipeg. Noran, Anderson & Guy, of Winnipeg, are solicitors for applicants.

Dominion Government Ry. to Hudson Bay.—The suspension of work on this railway from Pas to Port Nelson, Man., is merely the ordinary suspension for the winter months. Certain bridge work at Kettle Rapids will be gone on with during the winter. The nature and extent of the work for next year will not be decided upon until the spring, but it is generally anticipated that the line will be completed during the year.

Nothing definite has been decided, we are officially advised, as to the various terminal buildings to be erected at Pas.

It is reported that the dock for ocean going steamships at Port Nelson has been completed. It is 3,000 ft. from the shore line, with which it is connected by a steel trestle over which trains will be run. Considerable progress was made with the other harbor works during the past year. (Dec., 1916, pg. 484.)

Edmonton, Dunvegan & British Columbia Ry.—Ballasting and other work on the section from McLennan to Spirit River and on the branch from Spirit River to Grande Prairie is reported to have been finally completed.

The grading from Spirit River to Pouce Coupee, 54 miles, is reported completed. No track has been laid, but it is expected to begin this work early in the spring.

The line as originally projected was to effect a junction with the Pacific Great Eastern Ry. at the Alberta-British Columbia boundary. This P.G.E.R. is not yet completed to Fort George, there being a gap between Dundarave and Squamish at the western end of the line, and between Clinton and Fort George. Preliminary surveys have been made for the line between Fort George and the Alberta-British Columbia boundary. J. A. McArthur, President of the E.D. & B.C.R., was in Victoria Dec. 1, conferring with the B.C. Government on railway matters, and it is reported that some agreement may be reached under which the routing of the projected connection between the E.D. & B.C.R. with the P.G.E.R. will be worked out from Alberta rather than from Fort George, and that the E.D. & B.C.R. will be the constructing line. (Nov., 1915, pg. 447.)

Esquimalt & Nanaimo Ry.—The Victoria City Council has decided to eliminate the E. & N.R. from the negotiation in connection with the Johnson St. bridge matter. A general traffic bridge will be built by the British Columbia Government at the joint cost of the province and the city. (Dec., 1916, pg. 484.)

Essex Terminal Ry.—The Board of Railway Commissioners has authorized the opening for traffic of the company's line through a portion of Windsor, Ont., and through Sandwich to the north side of Titcombe Road,, Ojibway, mileage 3.25 to 8.58. This piece of line was built in 1915, zut was not approved by the board for traffic until quite recently.

We are officially advised that the company may arrange to build an additional 2 miles of main line track during this year. (June, 1916, pg. 222.)

Grand Lake Ry. & Transportation Co.—The Quebec Legislature has incorporated a company with this title to build tramways to connect Christopherson Lake, on Bell River, and Lake Lamy, with navigable water on the Ottawa River and to operate steam and other vessels in connection therewith. (Nov., 1916, pg. 447.)

Grand Trunk Ry.—A large amount of work has been done in the vicinity of the Victoria Jubilee bridge, Montreal, in retaining land for yard purposes. It has been going on for many years, and is a slow process, but when completed will give some much needed space for additional freight tracks.

Negotiations are still in progress between the City of Brantford, Ont., and the Board of Railway Commissioners as to the cost of the subway under the G. T. R., on St. Paul's Ave.

The new station erected at Port Colborne, Ont., is a brick structure over 100 ft. long, laid out in the most modern manner. New freight sheds and offices have also been erected and are in use. The yard facilities have been considerably improved.

A new classification yard has been practically completed at Pontiac, Mich., with a capacity of 456 cars. A new steel bridge on concrete abutments is also being erected to carry a double track. In connection with this new yard work there will be laid 2.08 miles of new second track.

The company is laying 7 miles of new second track easterly from Milwaukee Jct., with a new receiving, departure, and classification yard, with a capacity of 2,040 cars. All the grading is practically completed and track has been laid to accomomdate 600 cars.

Railway and Marine World for Oct. 1916, gave on page 400 some particulars of the new G. T. R. shops being built at Port Huron, Mich., to replace those burned in th ewinter of 1914-15. The buildings will cover a total area of 55 acres, a considerable area being devoted to the trackage necessary and are estimated to cost $700,000. Power for the operation and lighting of the plant in the various buildings will be supplied by six 150 h.p. boilers, serving double turbo steam generating units of 300 k.w. (Dec., 1916, pg. 484.)

Greater Winnipeg Water District.—Tenders are under consideration for the purchase of steel rails up to 60 lb. to the yard, sufficient to lay about 10 miles of track.

The Greater Winnipeg Water District Commission, which has built a steam railway along the aqueduct right of way from Transcona to Indian Bay, Shoal Lake, Man., is reported to be contemplating building an electric railway from Provencher Bridge, via St. Boniface, Notre Dame and Mission Road, to Transcona.

Another statement is reported to have been made to the effect that the Greater Winnipeg Water District Commission was considering a project to build an electric railway from Provencher bridge through St. Boniface to Transcona. (Oct., 1915, p. 404.)

Grenville, Harrington & Northern Ry.—The Quebec Legislature has under consideration the incorporation of a company with this title to build a railway from Grenville to Harrington East, and northerly in Argenteuil County.

Great Northern Ry.—Application is being made to the Dominion Parliament by the Vancouver, Victoria & Eastern Ry. & Navigation Co., a British Columbia subsidiary of the G.N.R., for an act confirming an agreement with the Canadian Northern Pacific Ry. for the joint use of the V.V. & E.R. & N. Co.'s tracks between New Westminster and Vancouver, and for the ratification of a second agreement with the same company for the joint use of the C.N.P.R. tracks between Hope and Sumas Landing, B.C.

The line which the V.V. & E.R. & N.Co. put in operation recently between Sumas Landing and Connor, B.C., is 9.32 miles long. Of this 8.19 miles was built in 1912-13, and the remaining 1.13 miles was completed in 1916.

Plans have been filed with the Vancouver City Council for the proposed freight sheds at False Creek. These show buildings of brick and timber construction with a 2 storey office building 40x100 ft. facing on Port Lane. A cold storage plant will be located at one end of the shed. The total estimated cost of the buildings is said to be about $125,000.

It was expected that the station build-

ing being erected on the False Creek flats, Vancouver, by the G. N. R. for joint use with the Northern Pacific Ry., would be completed Dec. 31. The entire building was reported on Nov. 30 to be 85% completed. Track laying in the station and yard has been in progress since that date. There will be in all 9 miles of tracks; 7 lines being laid in the station out of 11 proposed to be laid; 6 freight house tracks, 1 industry track, and 11 car tracks. We were officially advised Dec. 13, that the plastering of the station was being gone on with, and that the brick work of the G. N. R. freight shed was well under way while the foundations for the Northern Pacific Ry. freight shed had been completed. The power house has also been completed. These freight sheds, local reports state, are each 600 x 50 ft., including a 2 story brick office building.

We are also officially advised that plans are being prepared for a 15 stall locomotive house, a machine shop and boiler house 50 x 160 ft., store house 30 x 73 ft., and an oil house 20 x 36 ft. F. L. Townley, Vancouver, is the architect. The grading and filling of the yard space on the company's area of the flats is expected to be completed by April. The transfer of the various departments of the company's business from the present offices to the new building will be made during January. (Dec. 1916, pg. 484).

High River & Hudson Bay Ry. — A press report states that capital has been secured in England for starting upon this projected railway. Surveys have been made within the last two or three years, and the Department of Railways approved part of the route in the vicinity of High River in 1915. The company was originally incorporated in 1910, and it has secured extensions of time for construction from time to time from the Alberta Legislature. The line as originally projected was to run from the western boundary of Alberta at the Elk and Sheep River passes, thence down Sheep River to Black Diamond and into Calgary. From Calgary it was to run east to High River, Vulcan, Bow City, and thence to the eastern boundary of the Province in Township 23. The company has also secured incorporation from the Dominion Parliament as the High River, Saskatchewan & Hudson Bay Ry. Co., with power to build not only in Alberta, but in Saskatchewan and on to Hudson Bay. (June, 1916, pg. 222.)

Interprovincial & James Bay Ry.—The Dominion Parliament is being asked to extend the time for the building of this projected railway from the C.P.R. branch line from Mattawa, now terminating at Lumsden's Mills, Que., to or towards the Des Quinze River. Pringle, Thompson, Burgess & Cote, Ottawa, are solicitors for applicants.

The Quebec, Montreal & Southern Ry. has, we are officially advised, built a new locomotive house at St. Lambert, Que., to replace the one destroyed by fire at Longueuil. The new house is a two stall one, 70 ft. deep, 27 ft. across the front and 54 ft. at the back. It is of frame construction, and was expected to be completed by Dec. 25. (Nov., 1916, pg. 447.)

Michigan Central Rd.—During 1916 the company laid a number of new sidings and passing tracks on its Canadian lines. (Aug., 1916, pg. 317.)

The Minneapolis, St. Paul & Sault Ste. Marie Ry. Sunbrose branch at present terminates at Whitetail, Mont., and a press report states that it is proposed to extend it to Havre early in the spring. President Pennington was through the district recently and local reports state that it is proposed to build a line from Havre northerly to connect with the C.P.R. Wayburn-Lethbridge line, either at Pakowki or Foremost, Alta. The company now has a line connecting at Emerson, Man., and another connecting at Portal, Sask.

Ontario Niagara Connecting Bridge Co. —A press report states that the bridge proposed to be built by this company across the Niagara River near Niagara Falls, Ont., will be of steel on concrete abutments, and will provide accommodation for steam and electric railways, general vehicle traffic and for foot passengers. The estimated cost is $1,000,000. (May, 1916, pg. 182.)

Pacific Great Eastern Ry.—In connection with the harbor improvement scheme for Vancouver, which includes the building of a railway to encompass Burrard Inlet, it is reported that it is proposed to acquire the P.G.E.R. line along the north shore as far west as opposite the First Narrows, the price to be paid to be the cost to the railway company.

The North Vancouver City Council is consulting with the Vancouver City Council with a view to taking concerted action to form a plan to compel the P.G.E.R. to complete the construction of the line from North Vancouver to Squamish at an early date. The line has been built from North Vancouver to Dundarave a few miles out and local trains are being operated over it.

We are officially advised that 16½ miles of track was laid during 1916, northerly from Clinton, B.C. The company has on hand sufficient steel to take care of its immediate tracklaying requirements, and has contracted for delivery during the summer of 1917 of 19,500 tons of 60 and 70 lb. steel rails with the necessary angle bars, bolts and spikes for the continuance of tracklaying northerly to Prince George, where a junction will be effected with the Grand Trunk Pacific Ry.

The company has no branch lines under construction or projected at present. (Dec., 1916, pg. 484.)

Pacific, Peace River & Athabasca Ry.— A Vancouver press report states that development work is about to be started on a large coal area in the Groundhog River district of northern British Columbia, and that in the spring the construction of a raliway from the coal area down the Naas River valley to Nasoga Bay, about 50 miles north of Prince Rupert, will be started. Lord Rhondda is the principal promoter. This projected line would appear to be a part of the P.P.R. & A.R. project, which is represented in Vancouver by C. K. Law. (May, 1916, pg. 183.)

Pere Marquette Rd.—The company owning the sit selected for the new station in Sarnia, Ont., for the P.M.R. has refused to sell, and preparations are being made for expropriation proceedings. The plans for the building are ready, and the Sarnia St. Ry. has extended its line to the site. (Oct., 1916, pg. 401.)

Port Arthur, Ont.—An agreement has been signed between the Port Arthur, Ont., City Council and James Richardson & Sons, Ltd., respecting the building of an elevator there. The city is to secure a right of way from the wagon works for a spur track to the elevator, and to grant permission to the Canadian Northern Ry. and the C.P.R. to lay tracks to serve this and any other industry that may locate along the spur.

Quebec & Saguenay Ry.—It is reported that the work being done towards the completion of this railway is being carried out by the company, under the supervision of Gordon Grant, Chief Engineer, National Transcontinental Ry. This is being done, it is stated, in order that the company may be enabled to give a clear title to the Dominion Government. (Dec., 1916, pg. 484.)

Roberval-Saguenay Ry. — We are officially advised that the only construction in view is the electrification of the yards at Port Alfred, near Bagotville, Que. They are situated on the Ha Ha Bay Ry., which has been incorporated with the R.-S.R. (Apr., 1916, p. 139.)

Toronto Terminals Ry. Co.—The Toronto City Architect, on Dec. 9, granted a permit for the erection of the new union station on Front St. The permit is for the main building and east wing between Bay and York Sts., the estimated cost being $2,800,000. The total estimated cost of the completed building is $3,400,000. This is the largest permit ever issued in Toronto.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	$3,834,200	$2,636,800	$1,197,400	$ 711,000
Aug.	3,684,900	2,612,900	1,072,000	614,300
Sept.	3,187,900	2,455,300	732,600	x177,300
Oct.	3,716,800	2,496,500	1,220,300	x36,700
	$14,423,800	$10,201,500	$4,222,300	$1,111,300
Incr	$4,043,000	$2,931,700	$1,111,300	.....

Approximate earnings for Nov., $3,722,300, and for two weeks to Dec. 14, $1,810,500, against $3,535,400 and $1,654,100 for same periods respectively in 1914.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	$12,247,440.39	$8,230,348.66	$4,017,091.73	$1,216,688.61
Aug.	13,570,467.31	7,802,680.46	5,467,786.85	2,025,472.13
Sept.	12,134,159.96	7,004,400.80	5,129,759.16	384,458.52
Oct.	13,237,086.36	7,562,346.99	5,674,739.37	x904,694.78
	$50,899,154,02	$30,599,776,91	$20,289,377.11	$2,721,924,48
Inc.	$10,475,947.14	$7,754,022.66	$2,721,924.48	.....

Grand Trunk Railway Earnings.

Following are the earnings and expenses for the G.T.R., including the Canada Atlantic Ry., the G.T.W.R. and D.H.G. & M.R., for October, compared with those for October, 1915:—

Grand Trunk Railway.	1916.	1915.
Earnings	$4,618,000	$3,591,305
Expenses	3,270,000	2,527,500
Net earnings	$1,348.000	$1,063,805
Grand Trunk Western Railway.		
Earnings	$ 767,300	$ 781,944
Expenses	650,300	562,392
Net earnings	$ 117,000	$ 219,552
Detroit, Grand Haven & Milwaukee Ry.		
Earnings	$ 275.000	$ 293,442
Expenses	295,650	212,887
Net earnings	$ 20,650*	$ 80,555

*Deficit.

Approximate earnings for November, $5,343,653, and for two weeks ended Dec. 14, $2,355,174, against $4,190,871 and $2,035,759, for same periods respectively in 1915.

Grand Trunk Pacific Railway Earnings.

The approximate earnings for the Prairie Section, 916 miles, for Oct., were $566,503, against $973,581; and from July 1 to Oct. 31, $1,643,008, against $1,858,557 for same period 1915, and for three weeks ended Nov. 21, $375,719, against $591,472 for same period 1915.

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Northern Colonization Ry.—The Quebec Legislature has ratified an exchange of lands with the company. This measure affects the lands originally granted by the Province as a subsidy in aid of the building of the railway, which is now part of the C.P.R. system.

Track Section Prize Competition on Eastern Lines, Canadian Pacific Railway.

For the past four years an annual track section prize competition has been carried out on the Eastern Lines, C.P.R., which has aroused a healthy spirit of rivalry and keen competition among the officers and section forces of the different divisions and districts. Sixty-two prizes are awarded in the competition, as follows:—A General Manager's prize to the foreman having done the best season's work on Eastern Lines. Four General Superintendent's prizes, to the foreman on each district who has done the best season's work, exclusive of the winner of the General Manager's prize. Fourteen Division Superintendent's prizes, to the foreman on each division who has done the best season's work, exclusive of winners of higher prizes. Forty-three Roadmaster's prizes, to the foreman on each Roadmaster's territory who has done the best season's work, exclusive of winners of higher prizes.

Under this system no man can win more than one prize, and all foremen have an equal chance, as the quality of the work done throughout the season is the deciding factor, and not the actual physical condition of the section at the end of the season. The basis on which the sections are judged is entirely efficiency, and careful consideration is given throughout the season to the condition of, and work done on, ditches, gauge, spiking, line, surface, bolts, rail wear, so far as it can be controlled by the section forces, switches, sidings, right of way and station grounds, track signs, cattle guards and fences. The amount of work done and the hours of labor put in, both by regular force and extra gang, are also carefully considered, and the foreman accomplishing the best work with the least amount of labor—the physical condition of the section, as to grades, alignment, drainage, and character of roadbed being taken into consideration—wins the first prize.

The number of hours of regular labor and the number of hours of extra labor on the section are figured against the number of ties renewed, tie plates installed or changed, rails changed over on curves and ditching done, etc. The amount of track handled, right of way, spikes and bolts is fairly uniform on all sections, so that the condition with respect to these items at the end of the season is usually a criterion of the amount and quality of the work done thereon throughout the season. Where special conditions affect such work they are taken into consideration. Sime idea of the care exercised in judging a foreman's work can be formed by following the work in connection with the selection of a prize section. Toward the end of the season, on each of the 43 roadmasters' territories, a section is picked out as the most deserving in point of work done during the season with the material and labor available. These are carefully inspected by the Superintendent and Resident Engineer, who select the best one on each district for inspection by the General Superintendent and Division Engineer. All divisions of a district are covered by these two officers, and the section selected which they consider eligible for the General Manager's prize. The judging for the General Manager's prize is done personally by the General Manager, the Engineer, Maintenance of Way, the Assistant Engineer, Maintenance of Way, and district officers.

The winner of the General Manager's prize for 1916 is Foreman Allan King, Section 8, Shogomoc Subdivision, a branch line on the New Brunswick District. The winners of the General Superintendents' prizes are as follows:—New Brunswick District, Foreman O'Maillet, Section 15, Moosehead Subdivision. Quebec District, Foreman O. Tremblay, Section 7, Drummondville Subdivision. Ontario District, Foreman J. McMinn, Section 10, MacTier Subdivision. Algoma District, Foreman A. Raiche, Section 13, Cartier Subdivision.

Alaska Railway Construction Progress.

The United States Interior Department reports the following progress in the construction of the new government railways in Alaska up to Oct. 1:—During the present year, grading has been completed on the 38 mi. branch to the Matanuska coal field from Matanuska Jct., a point 36 mi. northeasterly from Anchorage Jct., a point on Cook Inlet, where construction began a year ago, and rails are being laid. It is anticipated that the branch will be completed before the end of the open season. At Moose Creek, a point on the branch line, about 12 mi. from Matanuska Jct., a coal mine has been opened, and coal is being taken out for the use of the railway and the town of Anchorage. Clearing and grading are under way on other portions of the line, particularly at points northward from Matanuska Jct., southerly from Anchorage toward Turnagain Arm of Cook Inlet and in the vicinity of Talkeetna (the junction of the Talkeetna and Susitna River about 100 mi. north of Anchorage).

The heaviest work to be encountered on the line is the hard rock cliffs along Turnagain Arm. Blasting and excavation for line here will be actively pursued during the winter. The Alaska Northern Ry., extending from Seward to Kern Creek, 71 mi., is being rehabilitated through and put into condition to haul construction material for the work along Turnagain Arm between Kern Creek and Anchorage. Clearing and grading are under way on the northern end of the main line in the vicinity of the crossing of the Tanana River at Nenana—the aim being to connect the Fairbanks mining region with the Nenana coal fields (a distance of 110 mi.) as early as possible. By the end of the present working seaseo it is anticipated that at least 85 mi. of new construction will have been completed.

A recent press dispatch from Seward, Alaska., says:—Delays in construction will prevent the completion of the government railways between Seward and Fairbanks before 1920 or 1921, instead of 1918 as contemplated, Capt. F. Mears, of the Alaska Railroad Commission, said here to-day before departing for Washington, D.C., where he will make his report. The tracks along the Turnagain arm, between Seward and Anchorage will probably not be completed before 1918 instead of 1917. Rough weather and difficulties in obtaining supplies are responsible for the delay. (Oct., 1916, pg. 400.)

Canadian Northern Railway Construction, Betterments, Etc.

Montreal Tunnel and Terminal Co.—Work has been started on the "cut" for the erection of the Canadian Northern Ry. station in Montreal. This cut will extend from Cathcart St. on the north to Lagauchetiere St. on the south, and from Mansfield St. on the west to St. Monique St. on the east. The work is being gone on with on Dorchester St., between Mansfield and St. Monique Sts., tramway service being temporarily suspended. The cut at this point will be 170 ft. wide and 50 ft. deep, which will be covered with a steel trestle bridge, with a concrete deck on which a double track car line will be laid.

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has authorized the opening for freight traffic of the line through Arundel, Ponsonby, and Amherst townships, Argenteuil and Ottawa counties, Que., mileage 0 to 9.57. This is the recently complete line from Arundel to Kaolin.

Toronto-Hamilton-Niagara line. — A route map has been filed with the Railways Department at Ottawa for a line from Toronto to Hamilton and thence to Thorold, Ont. The object is to secure a right of way for the line as between Bronte and Thorold, 44 miles. The Board of Railway Commissioners' approval has been given for sections of the route, between Toronto and Bronte, on the plans for the actual location of the line. The plans filed show a route along the Toronto and Niagara Co.'s power line.

Canadian Northern Ry.—A press report states that the company proposes to build a new station in Fort William, Ont., early in the summer. Two sites are said to be under consideration.

Canadian Northern Pacific Ry.—There has been deposited with the Public Works Department at Ottawa plan and description of the site and elevation of a proposed railway bridge across the South Thompson River at Kamloops.

The British Columbia Minister of Railways has approved of the company's plans for a temporary frame trestle over the British Columbia Electric Ry. at station 157+94, mileage 2.7, the plan having been approved by the B. C. E. R.

Vancouver Terminals.—Sir William Mackenzie, President, and M. H. MacLeod, General Manager and Chief Engineer, arrived in Vancouver, Dec. 12, to deal with a number of matters affecting the company's interests. They met the Mayor and city council to discuss the erection of the sea wall, the hotel, and other matters connected with the development of the False Creek terminals project. The company desires to secure an extension of time for carrying out the sea wall work, but the council wants it to be gone on with and completed within the time originally specified. Sir William is reported to have stated that the work would be resumed as soon as he had an opportunity of verifying certain matters. So far as the hotel site was concerned, Sir William stated that under present circumstances it would not be wise to go on with the erection of a large new hotel in the city. The company would prefer to build on its own property or on property near the same ground acquired from the city. The company would put up a better building on its own site than the one called for by the agreement. The terms of the agreement would be carried out, but he thought there was a just ground for granting an extension of time.

Sir William Mackenzie and Mr. MacLeod met the New Westminster City Council, Dec. 14, to discuss matters affecting the company's interests in that city. In the course of an interview he is reported to have said the new car shops at Port Mann would be opened about Feb. 1.

Lines on Vancouver Island. — D. O. Lewis, District Engineer, in charge of construction of lines on Vancouver Island, is reported as stating, Nov. 30, that the line from Patricia Bay to Victoria was ready, and traffic could be operated over it at any time.

Sir William Mackenzie and General Manager MacLeod, were in Victoria, Dec. 12, and made a trip of inspection over the line. Sir William said the line would be opened for traffic as early as possible; the electric motor car which would be used on the line would not be taken over from Port Mann until the ferry slip at Patricia Bay was finished. The line for through traffic from the mainland would be opened after the arrival of the car ferry from Quebec, but whether the Victoria-Patricia Bay line would be opened before that time would depend upon what local traffic could be obtained. (Dec. 1916, pg. 490.)

Greater Winnipeg Water District Railway Construction.

W. G. Chace, M.Can.Soc.C.E., read a paper on the aqueduct for the Greater Winnipeg Water District before the Canadian Society of Civil Engineers recently. The water supply is to be obtained from Indian Bay, Shoal Lake, a branch of Lake of the Woods. The distance being about 97 miles. The right of way, 300 feet wide (except for the easterly 12 miles which is 500 ft. wide) was cleared by contract in the winter and early spring of 1914. A standard gauge railway was constructed 40 ft. from the south boundary of the right of way during 1914 at a total cost of $1,325,000. The construction of the railway presented no unusual difficulties, and was carried out with such dispatch that trains were operating over the whole of it in Jan. 1915. The equipment consists of four 60-ton mogul locomotives, twenty-five 16-yard dump steel cars (now under contract), 20 flat cars, 10 box cars, 3 cabooses and 2 passenger cars. Additional equipment is being purchased.

The road, which is operated by the Greater Winnipeg Water District Commissioners, is connected with the Paddington transfer yard, meeting there all the railways running into Winnipeg, so that contractors' shipments can be made direct to their camps without reloading. Railway headquarters have been established at Deacon, where the operating staff is located, and where a machine shop, forge shop, and locomotive shed have been erected. A station building containing offices for the operating department and for one of the division engineers has also been erected at this point, as well as a cement shed, pumping plant, coal dock, oil house, camp buildings and electric light plant. Nine sidings and five 12,000-gallon water tanks have been located at nearly equi-distant points along the line. A telephone line has also been erected from end to end of the right of way, which is used both for train dispatching and for communication between the division engineers and headquarters at Winnipeg. A circuit for use of one of the contractors has also been erected on the District's poles.

The London and Port Stanley Railway and the G.T.R.

In the London & Port Stanley Ry.'s early days an agreement was made with the then Great Western Ry under which the L. & P.S.R. was to have the use of the G.W.R. station at London, Ont., and that the G.W.R. agents should sell tickets and check L. & P.S.R. passengers' baggage in the same way as for G.W.R. passengers. The agreement was carried out by the G.W.R. and its successor, the G.T.R., until the electrification of the L. & P.S.R. The London Railway Commission, which now operates the L. & P.S.R., under the new order of things, has applied to the Board of Railway Commissioners for an order directing the G.T.R. to carry out the original agreement, which is dated April 25, 1870. The commissioners reserved judgment, after refusing the G.T.R. counsel's application to have the matter settled in the courts, on the ground that the commission has no jurisdiction over an agreement affecting the working of two railway companies.

Grain Inspection at Western Points.

The following figures, compiled by the Department of Trade and Commerce, show the number of cars of grain inspected on railways at Winnipeg and other points on the Western Division, for November, and for three months ended Nov. 30, compared with those inspected for three months ended Nov. 30, 1915.

	Nov. 1916	3 months to Nov. 1915	3 months to Nov. 30, 1915
C. P. R.	21,067	48,189	80,018
C. P. R., Calgary ..	847	1,708	1,517
C. N. R.	8,908	23,964	39,487
G. N. R., Duluth ..	128	538	2,043
G. T. P. R.	4,697	9,172	19,504
Totals	35,647	83,571	142,569

Mail Transportation on U.S. Railways.—The U.S. Postmaster Geenral's annual report, issued recently, says,—"For many years the department has brought to the attention of Congress the necessity for a change in the basis of compensating railways for carrying the mails, asserting that the then existing basis of pay according to weight was inequitable and unjust, resulting in cases of both overpaymen t and underpayment to certain railways, and which in the aggregate resulted in the payment by the Government of an excessive sum for this service. The department will, on Jan. 1, file with the Interstate Commerce Commission its comprehensive plan of service, which will embody a recommendation looking to a reduction of the rates but at the same time assure to the railways a just and adequate compensation for the service performed." As a matter of fact, they have repeatedly shown that the compensation has been wholly inadequate.

F. W. Peters, General Superintendent, C.P.R., Vancouver, B.C., received a letter recently from Portland, Ore., asking for forgiveness of a man who stole a ride on a C.P.R train some years ago. The writer did not enclose the price of the ride.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Algoma Central and Hudson Bay Ry.—Following the termination of the receivership, the following appointments have been made:

R. HOME SMITH, Toronto, has been appointed President;

G. A. MONTGOMERY, heretofore General Superintendent, has been appointed Vice President and General Manager. Office, Sault Ste. Marie, Ont.;

R. S. McCORMICK, Chief Engineer, has also been apopinted Superintendent, vice G. A. Montgomery, promoted. Office, Sault Ste. Marie, Ont.;

A. SENIOR has been appointed Trainmaster, Sault Ste. Marie, Ont., vice T. F. Rahilly, resigned.

None of the above mentioned officials has jurisdiction on the Algoma Eastern Ry., which has been placed under separate management.

Following is a list of other officials, all with offices at Sault Ste. Marie, Ont., except where otherwise stated: Secretary, A. TAYLOR, Toronto; Comptroller and Treasurer, I. L. GODFREY; Assistant Comptroller and Treasurer, E. B. BARBER; General Freight and Passenger Agent, H. J. HERROLD; Purchasing Agent and Chief Storekeeper, F. W. ACHESON; Master Mechanic, T. FRASER; Locomotive Foreman, H. D. BARLOW; Car Foreman, C. ROSE; Roadmaster, O. AUBIN; Roadmaster, D. A. McINNIS, Franz, Ont.

Algoma Eastern Ry.—Following the termination of the Algoma Central and Hudson Bay Ry. receivership the manwhich was formerly under A. C. & H. B. R. officials, has been separated, there being no physical connection between the two roads. The following appointments have been made:—President, W. C. FRANZ, Sault Ste. Marie, Ont.; Vice President, J. FRATER TAYLOR, Sault Ste. Marie, Ont.; Secretary, A. TAYLOR, Toronto; Treasurer, E. W. SHELL, Sault Ste. Marie, Ont.; Comptroller T. F. RAHILLY, heretofore Trainmaster, A. C. & H. B. R., Sault Ste. Marie, Ont., Sudbury, Ont.; General Manager, D. F. THOMAS, heretofore Superintendent, Trans St. Marys Traction Co., Sault Ste. Marie, Ont., Sudbury, Ont.; Superintendent, A. J. DONEGAN, Sudbury, Ont.; J. P. MADER, General Agent, Sudbury, Ont.

Canadian Government Railways.—W. B. JOHNSON has been appointed Master Mechanic, District 6, Intercolonial Division. Office, Truro, N.S.

Canadian Northern Ry.—WM. PHILLIPS, Freight Traffic Manager, Eastern Lines, Toronto, has resigned to enter the Cunard Steamship Co.'s service.

V. NICHOLSON, heretofore chief clerk to City Agent, Kingston, Ont., has been appointed City Ticket and Express Agent, Belleville, Ont.

C. E. JONES has been appointed Supervisor of Fuel, Eastern Lines, in charge of distribution and accounting of all fuel, for locomotives, shops, stations, water stations and all other purposes. All reports on fuel consumption are sent direct to him and he reports to the General Manager. Office, Toronto.

R. R. COOPER, heretofore ticket clerk, Union Station, Toronto, has been appointed Ticket Agent there, vice A. R. Burk, who has enlisted with the 255th Battalion, Queen's Own Rifles, for overseas service.

W. M. HOOD, heretofore Travelling Freight and Passenger Agent, North Bay, Ont., has been appointed District Freight and Passenger Agent, Sudbury, Ont.

W. J. COUGHLIN has been appointed Assistant Supervisor of Bridges and Buildings, between Port Arthur and Hornepayne, Ont.

B. L. RUNKLE has been appointed Track Supervisor, with jurisdiction from Longue Lac to Fire River; Ont. Office, Hornepayne, Ont.

P. VICKS has been appointed Track Supervisor, with jurisdiction from Fire River to Capreol, Ont., vice J. Quinlan, transferred. Office, Foleyat, Ont.

J. QUINLAN, heretofore Track Supervisor, Fire River to Capreol, Foleyat, Ont., has been appointed Track Supervisor, with jurisdiction from Port Arthur to Longue Lac, Ont., vice W. M. Jacklin, appointed Inspector of Maintenance of Way, Toronto, as announced in our last issue. Office, Port Arthur, Ont.

J. A. ROSS has been appointed station ticket agent, Saskatoon, Sask., vice W. E. Presscott, resigned.

Canadian Northern Transfer Co.—D. H. MURRAY has been appointed acting Superintendent, vice R. A. C. Young on active service. Office, Montreal.

Canadian Pacific Ry.—E. ALEXANDER, heretofore one of the two assistant secretaries of the company, has been appointed Secretary, vice W. R. Baker, C.V.O., who, at his own request, has been relieved of his duties and placed on the retired list. Office, Montreal.

G. W. CURTIS, Industrial Agent, Eastern Lines, Montreal, having enlisted in the Royal Flying Corps, any communications or actions in connection with the company's industrial work are being attended to by H. P. TIMMERMAN, Industrial Commissioner, or by one of the traffic or operating officials immediately in touch with the situation.

K. D. JOSEPH, heretofore acting Assitant Superintendent, Bruce Division, Ontario District, Toronto, has been appointed Trainmaster, McAdam, N.B. This is a new position occasioned by winter traffic to the seaboard.

G. C. GAHAN, heretofore chief clerk, General Auditor's Office, has been appointed Assistant General Auditor, Montreal.

F. BENGER has been appointed acting Engineer of Tests, Angus Shops, Montreal, vice G. St. G. Sproule, loaned to the Imperial Munitions Board.

M. KELLY, heretofore Resident Engineer, Toronto Terminals, has been appointed Resident Engineer, Farnham Division, Quebec District, vice D. A. Wallace, resigned. Office, Farnham, Que.

J. H. REEDER, heretofore Resident Engineer, Schreiber Division, Algoma District, Schreiber, Ont., has been appointed Resident Engineer, Smiths Falls Division, Quebec District, vice T. B. Ballantyne, transferred. Office, Smiths Falls, Ont.

E. A. CAMPBELL, heretofore Freight Agent, Ottawa, Ont., has been appointed Assistant Superintendent, Smiths Falls Division, Quebec District. Office, Smiths Falls, Ont.

F. P. TINKER has been appointed District Freight Agent, Ottawa, Ont., vice G. P. Ruickbie, transferred.

W. COULTER, heretofore Assistant Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont., has been appointed Freight Agent, Ottawa, Ont.

L. G. ROGERS, heretofore Assistant Superintendent, Trenton Division, Ontario District, Trenton, has been appointed Yardmaster there.

D. O. WOOD, General Freight Agent for Ontario, Allan Line Steamship Co., Toronto, has also been appointed Assistant Export and Import Agent, C.P.R., vice W. C. Duncan, loaned to the acting Director of Overseas Transport for the balance of the war. Office, C.P.R. Building, Toronto.

J. A. TOBIN, heretofore Assistant Superintendent, London Division, Ontario District, London, has been appointed Assistant Superintendent, Bruce Division, Ontario District, vice K. D. Joseph, transferred. Office, Toronto.

F. S. ROSSETER, heretofore Resident Engineer, London, Ont.. has been appointed Assistant Superintendent, London Division, Ontario District, vice J. A. Tobin, transferred. Office, London, Ont.

J. M. SILLIMAN, heretofore Resident Engineer, Laurentian Division, Quebec District, Montreal, has been appointed Resident Engineer, London Division, Ontario District, vice F. S. Rosseter, transferred. Office, London.

T. B. BALLANTYNE, heretofore Resident Engineer, Smiths Falls Division, Quebec District, Smiths Falls, Ont., has been appointed Resident Engineer, Schreiber Division, Algoma District, vice J. H. Reeder, transferred. Office, Schreiber, Ont.

J. A. DeWOLFE, heretofore chief clerk to Vice President and General Manager, Western Lines, Winnipeg, has been appointed Trainmaster, Portage Division, Manitoba District. Office, Winnipeg.

A. J. SHULMAN, heretofore Travelling Passenger Agent, Edmonton, Alta., has been appointed Travelling Passenger Agent, Alberta District. Office, Calgary.

E. OFFICER, heretofore Travelling Passenger Agent, Southern Alberta, has been appointed chief clerk to District Passenger Agent, Calgary, Alta., vice V. A. Bowes, who has taken out a commission for active service.

W. J. McLEAN, heretofore Road Foreman of Locomotives, Medicine Hat Division, Alberta District, Medicine Hat, has been appointed Trainmaster, Medicine Hat Division, Alberta District, vice A. A. Smith. Office, Medicine Hat.

J. L. JAMIESON, heretofore locomotive man, Medicine Hat, Alta., has been appointed Foreman of Locomotives, Medicine Hat Division, Alberta District, Medicine Hat, vice W. J. McLean, transferred.

E. TASKER, heretofore Car Foreman, Crowsnest, B.C., has been appointed Car Foreman, Field, B.C., vice M. J. Jordan, transferred to Vancouver, B.C., as car repairer.

F. W. ADAMS, heretofore boiler maker, Lethbridge, Alta., has been appointed Foreman Boilermaker, Revelstoke, B.C., vice S. Blower, transferred.

A. E. CHESTERMAN, heretofore car repairer, has been appointed Car Foreman, Crowsnest, B.C., vice E. Tasker, transferred.

W. S. STEWART, heretofore ticket clerk, City Ticket Office, Victoria, B.C., is reported to have been appointed ticket agent, Hotel Vancouver, Vancouver, B.C.

Cunard Steamship Co.—WM. PHILLIPS, heretofore Freight Traffic Manager, Eastern Lines, Canadian Northern

Ry., Toronto, has been appointed Canadian Representative, Cunard Steamship Co. Office, Montreal.

Dominion Atlantic Ry.—W. K. McQUARRIE, heretofore Resident Engineer, Revelstoke Division, British Columbia District, C.P.R., Revelstoke, B.C., has been appointed Engineer, D.A.R., vice G. C. Hare, resigned. Office, Kentville, N.S.

Duluth, South Shore & Atlantic Ry.—W. J. ELLISON, heretofore acting Treasurer, has been appointed Treasurer. Office, Marquette, Mich.

Grand Trunk Ry.—P. J. PHELAN has been appointed Supervisor of Bridges and Buildings, Montreal Division, vice W. J. Tyers, transferred. Office, Montreal.

W. J. TYERS, heretofore Supervisor of Bridges and Buildings, Montreal Division, has been appointed Supervisor of Bridges and Buildings, Belleville Division, vice J. McMahon, deceased. Office, Belleville, Ont.

The following station agents have been appointed:—Bromptonville, Que., P. J. Bernard; Danville, Que., L. D. Cormier; Strathmore, Que., T. W. Brown; St. Polycarpe Jct., Que., A. C. Ritza; Lorneville Jct., Ont., W. R. Dickson; Woodville, Ont., W. Oliver; Collingwood, Ont., R. W. Thom; Longwood, Ont., H. G. Simmons; Marshville, Ont., G. F. Haynes; Hespeler, Ont., N. A. Walford; Walkerton, Ont., J. F. Clancy; Cargill, Ont., W. Russell.

Grand Trunk Pacific Ry.—A. H. MULCAHEY has been appointed Assistant Purchasing Agent, Winnipeg.

The following station agents have been appointed:—Pope, Man., F. D. Livingstone; Zelma, Sask., J. W. McGhee; Lewvan, Sask., J. H. Walker; Edgerton, Alta., G. L. Jordon; Viking, Alta., J. L. Dodds; Bruce, Alta., R. L. Summer; Calgary, Alta, J. J. Lucas; Giscome, B.C., C. W. Jaminette.

Hudson Bay Railway.—A. V. FRANKLIN, of the Manitoba Comptroller's office, Winnipeg, has been appointed acting Auditor, H.B.R., vice W. J. Logan, appointed Assistant to the Comptroller General for Manitoba. Office, Pas, Man.

Kettle Valley Ry.—A. A. SMITH, heretofore Trainmaster, C.P.R., Medicine Hat, Alta., has been appointed Assistant Superintendent, K.V.R. Office., Penticton, B.C.

Michigan Central Rd.—D. W. DONAHUE, heretofore Superintendent, Detroit Division, Detroit, Mich., has been appointed Superintendent, Northern Division, Bay City, Mich.

R. B. TURNEY has been appointed Superintendent, Detroit Division, Detroit, Mich., vice D. W. Donahue, transferred.

Minneapolis, St. Paul & Sault Ste. Marie Ry.—R. G. NORRIS has been appointed Travelling Passenger Agent, Kansas City, Mo., vice K. A. Cook, promoted.

Oshawa Ry.—J. J. CALLAHAN has been appointed Superintendent, vice D. A. Valleau. Office. Oshawa, Ont.

Pennsylvania Rd.—S. T. STACKPOLE, heretofore Canadian Freight Agent, Toronto, has been appointed Representative, Foreign Freight Department, New York, devoting his entire time to the work of that department.

EDWARD PLUMMER, heretofore in the Toronto Office, has been appointed Canadian Freight Agent, vice S. T. Stackpole, promoted. Office, Toronto.

Railway Electrification was the subject of an address to the American Institute of Electrical Engineers, Toronto section, on Dec. 15, by G. H. Gill, Assistant Engineer, Railway and Traction Department, General Electric Co.

Traffic Orders by Board of Railway Commissioners.

Rates on White Lead and Paint.

25667. Nov. 27. Re Montreal Board of Trade complaint against advances made in rates on paints, dry or in oil, and on khite or red lead, in carloads, from Montreal. Upon consideration of the evidence presented in the Eastern Rates Case relating to these commodities, and its appearing that the rates on white lead were not disposed of in the judgment in that case, and upon the reading of what is filed in support of the present application, and the report of the Board's Chief Traffic Officer, it is ordered that the Grand Trunk, Canadian Pacific and Canadian Northern Railways be ordered to publish and file commodity rates on dry white lead, in carloads, from Montreal, of 2c. per 100 lb. over the commodity rates which were being charged thereon when the application in the Eastern Rates Case was presented to the Board, but restricted to destinations where paints are manufactured; the said rates to become effective not later than Dec. 15, 1916; and it is further ordered that the application with regard to the rates on paints be dismissed.

Rates on Furs, Hides, Pelts and Skins.

25687. Re application of Canadian Freight Association, on behalf of the railway companies subject to the Board's jurisdiction under sec. 321 of the Railway Act, for approval of proposed Supplement 8 to Canadian Freight Classification 16, revising the ratings on furs, hides, pelts and skins. Notice of the proposed revised ratings having been given in the Canada Gazette as required by sec. 321 of the Railway Act, and to the business organizations enumerated in General Order 153, and the proposed changes having been agreed to by the parties interested therein; upon the consideration of what has been filed, and upon the recommendation of the Board's Chief Traffic Officer, it is ordered that the proposed Supplement as amended and revised and resubmitted for approval by the Canadian Freight Association's Chairman, by his letter dated Nov. 15, 1916, be approved.

Transfer Track at Yorkton.

25724. Dec. 15. Re application of the Canadian Northern Saskatchewan Ry. Company (Wroxton Westerly Branch), under secs. 227 and 237 of the Railway Act, for approval of proposed transfer track between the applicant company's railway and the C.P.R. in the n.w. ¼ sec. 36 and the n.e. ¼ sec. 35, Tp. 25, R. 4, west 2nd m., at Yorkton, Sask. Upon reading what is filed in support of the application and on behalf of the C.P.R., and upon the report and recommendation of the Board's Assistant Chief Engineer, it is ordered that the application be granted, the question of the cost of the transfer track to be reserved for further consideration by the Board.

Grand Trunk Railway Track Inspection Trip.

The official inspection trip over G.T.R. lines, referred to in previous issues, was completed on Oct. 23, and we have been officially advised recently the names of the section foremen who received the highest general average and honorable mention on each supervisor's territory, as follows:—

Eastern Lines—GROUP 1.—J. S. Burnett, B. Little, O. Arsenault, A. Dufour, M. Peters, F. Serviss, A. Woods. GROUP 2.—F. W. Skeates, H. Le Page, J. Manley. F. Buchey. GROUP 3.—F. Therrien, W. Cooke, J. Bell, W. Woodward, H. Colwell, J. McKenney, C. Frebel.

Ontario Lines.—GROUP 1.—A. McKellar, J. Eyre, J. Thompson, D. Dargie, E. Dybal, J. Moore, J. Ballard, W. Kirchen, J. Peltier. GROUP 2.—H. Hildenbrandt, W. Waldruff, H. Melway, J. Kavanagh, J. Massinger, I. Vandenburg, A. Bidwell, F. Fukajewski, C. Bullock. GROUP 3.—C. Martin, R. H. Kearns, R. Stonehouse, J. Townsend, E. Stephenson, R. Hill, J. McFarland.

Western Lines.—GROUP 1.—J. Hubbard, C. F. Hanicke, B. Long, W. Smith, B. Wedel. GROUP 2.—J. Cooney, W. Johnston, C. Wendt, J. Coughlin, A. Wetskniski. GROUP 3.—G. Boehl.

Box Car, Duluth, Winnipeg and Pacific Railway

The above illustration shows one of the 750 box cars which the Canadian Northern Ry. has had built in the U. S. recently for its subsidiary, the D. W. & P. Ry. They were fully described in Canadian Railway and Marine World for November, 1916, pg. 438.

Skilled Railway Employes for Overseas Service.—T. L. Scott, of Mulgrave, N.S., has been authorized to raise No. 1 Section, Skilled Railway Employes, for railway operations in France. The unit will consist of one captain, two lieutenants and 268 other men. It will be recruited throughout Canada and will be finally mobilized in Montreal, Mr. Scott being appointed Captain.

The Geographic Board announces that the name of Carleton Point, P.E.I., has been changed to Borden Point, and that the new car ferry terminal site there has been named Port Borden.

Canadian Pacific Railway Construction, Betterments, Etc.

New Brunswick District.—The new shops at McAdam Jct., N.B., are expected to be completed and ready for occupation by Jan. 31. Only some minor fittings are required in the stores building, the blacksmiths' shop, and the coaling plant; and the power house is ready for the installation of the boilers and machinery.

Northern Colonization Ry.—The Dominion Parliament is being asked to extend the time for the construction of the extension of this railway now terminating at Mont Laurier, Que., westerly to Lake Timiskaming, where it would effect a junction with the C.P.R. branch from Mattewar to Timiskaming and Kippewa Lakes, and the Interprovincial and James Bay Ry.

Manitoba District.—D. C. Coleman, Assistant General Manager, Western Lines, who was in Port Arthur, Ont., Dec. 1, on an inspection trip, is reported to have said in the course of an interview that while the company had immense interests at Fort William, which it was its duty to conserve and protect, it should be understood that it would endeavor to do so without injury to Port Arthur's special interests. The company received a great deal of traffic from Port Arthur, and it would be folly on its part to jeopardise it. These observations were made by him on account of some feeling having developed in Port Arthur that the C.P.R. was in opposition to some plans being worked out for the extension of the harbor facilities of the city easterly.

The question of the supply of water to the C.P.R. from the Greater Winnipeg Water District's plant now under construction, is reported to be again under consideration. The C.P.R. has paid over $40,000 towards the expense of this work, out of $200,000 promised. The company pays no direct taxes towards the construction of the aqueduct, and in July, 1916, it was notified by the Winnipeg City Council that as it did not pay taxes it could not be supplied with the water.

Alberta District.—The Board of Railway Commissioners has authorized the opening for traffic of the extension of the line easterly from Sterling, Alta., between mileage 71.7 and 85.1. Track has just been laid to the latter point, at the Manyberries settlement.

We are officially advised that S. E. Jenkins & Co. have secured the contract for the new pier at Granville St., Vancouver. The dimensions of the pier with some description of the work to be done were given in Canadian Railway and Marine World for October on page 403. S. S. Jenkins has been in Vancouver recently arranging for starting the work, which is to be pushed as fast as possible.

A Chicago press report stated on Dec. 5 that the C.P.R. was preparing to spend between $10,000,000 and $15,000,000 upon grain elevators and additional terminal facilities at Vancouver. The company has just let a contract for the erection of a new pier at Vancouver, and has plans prepared for further development of its ocean terminals at Vancouver, for carrying on as the extension of its business demands, but it is scarcely likely that they include a grain elevator, as the one built by the Dominion Government has not yet had a bushel of grain stored in it. (Dec. 1910, pg. 492.)

British Columbia District.—While some trains have been operated through the Connaught Tunnel at Rogers Pass, the company announced recently that it would not be opened for regular traffic until Dec. 31, or later." The distance from Calgary, Alta., to the tunnel's Bear Creek portal is 216.84 miles, and from the Glacier portal to Vancouver is 419.56 miles; the tunnel itself is about 5 miles long. The mileage to Vancouver from various points by the old route and by the tunnel are:—

	Old Route.	Tunnel Route.
Toronto	2,720	2,715.50
Montreal	2,895	2,890.10
Winnipeg	1,483	1,478.50
Calgary	646	641.40

G. A. Mountain, Chief Engineer Board of Railway Commissioners, inspected the tunnel Dec. 7, and the Board has authorized its opening for traffic.

Railway Rolling Stock Notes.

The C.P.R. has received 423 box cars from its Angus shops, Montreal.

The G.T.R. is reported to be ordering material and specialties for repairing 480 box cars in its own shops.

Orders are reported to have been received from France, by the Baldwin Locomotive Works, for 100 heavy type locomotives.

A cable dispatch from England states that the British War Office has placed an order with the Canadian Locomotive Co. for 40 consolidation locomotives.

The C.P.R. has ordered 432 freight refrigerator cars from its Angus shops, Montreal, and has cancelled the order placed there for 74 steel underframe box cars, 40 ton capacity, which was mentioned in our November issue.

The Canadian Northern Ry. has received a further 400 box cars, nos. 30,300 to 31,098 inclusive, from Haskell & Barker Car Co.; 1 rotary snow plough from American Locomotive Co.; 2 electric locomotives from General Electric Co., and 1 from Canadian General Electric Co., for Mount Royal Tunnel service.

It is reported from Russia that the decapod (2-10-0) locomotives shipped from this continent recently, and some of which were made by the Canadian Locomotive Co., have created records there for haulage capacity. One of these locomotives, operating over the Nikolaief Division of the Southern Ry., is stated to have hauled a load of 4,424 tons, on an experimental trip. The length of the train was 2,800 ft.

The Russian Government, which was mentioned in our last issue as having placed orders for decapod (2-10-0) locomotives as fololws:—Canadian Locomotive Co., 20; American Locomotive Co., 40, and Baldwin Locomotive Works, 40, is now reported to have increased the orders, with the Canadian Locomotive Co., by 21; and with the American Locomotive Co. and the Baldwin Locomotive Works, by 66 each, making a total of 253 altogether.

Canadian Government Railways have received 7 mikado locomotives from Canadian Locomotive Co. 1 rotary snow plough and 10 Santa Fe (2-10-2) locomotives from the American Locomotive Co. Particulars of the mikado locomotives weer given in a previous issue. Following are some details of the Santa Fe locomotives:—

Weight in working order, engine .....324,000 lbs.
Weight in working order, engine and tender ..... 514,000 lbs.
Weight on drivers .....260,000 lbs.
Cylinders ..... 26 by 32 ins.
Boiler pressure ..... 200 lbs.
Water capacity .....8,300 imp. gals.

Among the Express Companies.

P. E. Matthews, Springside, Sask., has been appointed agent, Dominion Ex. Co., Viscount, Sask.

G. L. Shearer has been appointed acting agent, Canadian Ex. Co., Prince George, B.C., vice M. E. McLeod.

The Canadian Ex. Co. has opened offices at Lawson, Quinton and Riverhurst, Sask.; Mountain Park, Alta., and Giscome, B.C.

V. Nicholson, City Ticket Agent, Canadian Northern Ry., Belleville, Ont., has also been appointed agent, Canadian Northern Express Co. there.

The Canadian Northern Ex. Co. has moved its accounting department from Winnipeg to Toronto, in charge of J. A. Hill, with office at 39 Wellington St. East.

The Canadian Northern Ex. Co. has opened offices at Bristol, Que.; Vista, Man.; and Brule, Forestburg and Meeting Creek, Alta., and has closed its offices at East Selkirk and Oakland, Man., and Errington, Alta.

The Express Traffic Association of Canada has removed its offices from the Dominion Express Building, King and Simcoe Sts., Toronto, to Canadian Express Building, 95 McGill St., Montreal. As stated in our last issue, C. N. Ham has been appointed Secretary.

The United States Ex. Co. has made a third distribution of assets, amounting to $8 a share, the total amount paid since the commencement of liquidation being $48 a share. All the securities have now been disposed of, and it is anticipated that some of the real estate will be offered for sale shortly. The building at 2 Rector St., New York, is valued at $3,500,000, and when this has been sold a further dividend will be paid.

The Good Cheer Club, an organization of Dominion Ex. Co.'s employes in Winnipeg, is looking after the welfare of the 36 employes who have gone to the front from Winnipeg. Since March, a wrist watch has been given to each man enlisting, and 160 parcels have been sent overseas. In addition to this, arrangements have been made with a catering firm in London, Eng., to see that any of the company's employes who may be wounded and in hospital are well looked after.

Canadian Ex. Co.'s earnings, expenses, etc., for August and for two months ended Aug. 31, 1916, compared with those for same periods, 1915, are as follows:—

	Aug. 1916	Aug. 1915
Mileage lines covered	12,049.93	10,238.13
Transportation charges	$380,452	$325,941
Express privileges, Dr.	220,090	170,060
Operations other than transportation	6,067	5,370
Total operating revenue	166,429	161,250
Operating expenses	163,043	133,942
Net operating revenue	3,385	27,307
Uncollectible revenue from transportation	10	13
Express taxes	4,760	4,260
Operating income	1,325	23,094
	July 1 to Aug. 31, 1916	July 1 to Aug. 31, 1915
Transportation charges	763,266	633,515
Express privileges, Dr.	410,191	327,182
Operations other than transportation	11,719	10,632
Total operating revenue	364,794	316,966
Operating expenses	321,456	270,763
Net operating revenue	43,337	36,202
Uncollectible revenue from transportation	55	15
Express taxes	9,400	8,400
Operating income	33,881	37,789

C.P.R. Ontario Employes have contributed $500 to the Toronto and York County Patriotic Fund, making their 15th contribution, with a total of $11,589 since Sept., 1915.

Electric Railway Department

Proposed Hydro Electric Radial Railways in the Niagara Peninsula.

A number of municipalities concerned in the proposed construction of radial railways between Port Credit and St. Catharines, and between Welland and Bridgeburg, will be asked to vote, on Jan. 1, 1917, to authorize the councils to enter into agreements with the Hydro Electric Power Commission of Ontario for the struction and operation of such lines.

The Port Credit-St. Catharines line is intended to connect with the proposed hydro radial line between Toronto and London, already authorized, at Port Credit, and the municipalities interested are,—Toronto, Trafalgar, Nelson, East Flamboro, West Flamboro, Barton Saltfleet, North Grimsby, Clinton, Louth and Grantham townships; Grimsby and Beamsville villages; Oakville and Burlington towns, and Hamilton and St. Catharines cities. The total mileage from Port Credit to St. Catharines is 59.57. The route proposed is as follows,—

Port Credit-Hamilton section: From a point approximately one mile west of Port Credit on the projected Toronto-London line it is proposed to parallel the Grand Trunk Railway to near Clarkson, thence southwesterly across the Toronto-Hamilton highway to Con. 3, thence through same to Oakville, where Oakville Creek will be crossed near Sheddon Ave. From Oakville the line will strike straight for the Hamilton Radial Ry. crossing of Bronte Creek, from which it is proposed to parallel the Hamilton Radial Ry. to Burlington. Through Burlington the line will cross the town in the neighborhood of Wellington Ave., and thence direct to a crossing of the old Desjardins Canal at Valley Inn;

Hamilton City section: Through Hamilton it is proposed to parallel the G.T.R. main line on the west side between the railway and the highway. Through Harvey Park and Dundurn Park the line will be south of and as close to the G.T.R. as possible, and will continue easterly, crossing Barton St. near Greig St., and keeping on the south side of Barton St. to the corner of Tiffany St., where it will cross Barton St. and continue northeasterly across Bay, Park, Murray and McNab Sts. and James St. between Murray and Stuart Sts., thence in the same general direction across Hughson, Mary, Catharine, Ferguson and Wellington Sts., at which latter point it will turn and follow south of Ferire St., across Victoria and Emerald Sts. to a point just north of the T.H. & B.R. spur, which it will parallel on the north side to Sherman Ave., thence it bears northeasterly to the south side of the Hamilton and Northwestern Ry., which it will parallel to the city limits;

Hamilton-St. Catharines section: From Kenilworth Ave., Hamilton, just south of the Hamilton and Northwestern Ry., the line will turn and bear southeasterly to midway between the G.T.R. Stoney Creek station and the village, thence to about ¼ mile north of Fruitland and at about the same distance north of the Hamilton stone road as far as Winona, from which it will parallel the G.T.R. on the south side through Grimsby and as far east as the Grimsby and Clinton township line, from which it will bear southeasterly to Beamsville, just north of the Hamilton stone road, and thence parallel the same to Jordan. From Jordan to the town line between Louth and Grantham it is proposed to follow in the neighborhood of the road allowance between concessions 6 and 7 of Grantham Tp. to where it crosses the G.T.R., thence southeasterly to near Victoria and Permilla Sts. and along Permilla St. to the west end of the new bridge over the old Welland Canal.

Following is an estimate of the cost of construction, equipment and operation, with estimated operating revenue,—

Capital Cost:	
Right-of-way, track construction, and buildings	$8,935,363
Sub-station, car shops, and rolling stock	2,425,000
	$11,360,363
Annual Operating Revenue:	
Passenger revenue	$760,000
Freight revenue	545,000
Miscellaneous revenue	57,000
	$1,362,000
Annual Charges:	
Operating expenses	$570,289
Maintenance expenses	152,193
Total operating and maintenance expenses	$722,482
Interest charges	568,018
	$1,290,500

The class of construction covered by the estimates is based upon a single track line of 80 lb. rails on private right of way for practically the entire distance. The line will be double tracked through Hamilton, with practically no level highway crossings, thus allowing high speed right through the city. By connecting with the Toronto-London line at Port Credit it will be possible to utilize the high speed entrance of that line to the large radial terminal to be provided in the centre of Toronto. The Toronto entrance will have no level highway crossings between the centre of the city and New Toronto, and will utilize a steel viaduct along the harbor front, a tunnel under the exhibition grounds, an open cut through South Parkdale, and an elevated embankment from Sunnyside to the Humber River. Ample allowance is said to have been made to cover a very high class of construction, and 80 lb. steel rails, concrete culverts, steel bridges and other similar structures are designed to carry, in an economical manner, the heaviest types of freight cars now in use on steam railways. Proper station facilities, freight sheds and team tracks have been provided for in the various municipalities, and especially in Hamilton, where provision is made for a passenger terminal of sufficient size to accommodate the other lines which are proposed for that district.

The 1,500 volt direct current system of power has been estimated upon, with 4 substations located at various points between Port Credit and St. Catharines. This voltage and substation spacing will ensure ample power supply to heavy freight trains. The following equipment has been estimated upon,—

30 3-compartment, all steel, passenger motor cars.
6 suburban passenger motor cars.
15 passenger trailer cars.
4 express motor cars.
2 motor work cars.
10 60-ton steel locomotives.
350 freight cars.

The furnishings of the passenger cars will be of a high standard, and approximately 500 h.p. in motor capacity on each car will allow high speed even when a trailer is hauled.

It is anticipated to give practically hourly service between Toronto and St. Catharines, with a suburban service for a few miles both east and north of Hamilton. Limited cars, making few stops between termini, will be run at certain hours to take care of through business, and these cars should, it is claimed, make practically the same running time between Toronto and St. Catharines as is now in effect on the G.T.R. Local cars will, of course, be run in addition to the limited trains, and these will stop at approximately one mile intervals The 10 locomotives provided for in the estimates will be used to haul heavy freight trains, and it is anticipated that from 3 to 6 round trips a day will be required to handle the freight business which has been estimated. In addition to this, express cars will also be used to handle light package, milk and freight business. These cars can make frequent stops along the line and collect milk cans, farm produce, etc., at points convenient to the residents of the different sections.

Following are the municipalities to vote on the project, with the total amount of debentures to be issued by each for deposit with the commission under the agreements,—

Toronto Township	$243,087
Trafalgar Township	538,735
Nelson Township	374,812
East Flamboro Township	266,626
West Flamboro Township	66,669
Barton Township	284,484
Saltfleet Township	1,002,296
North Grimsby Township	424,077
Clinton Township	473,746
Louth Township	563,595
Grantham Township	128,280
Grimsby Village	101,817
Beamsville Village	51,469
Oakville Town	203,098
Burlington Town	144,536
Hamilton City	5,869,286
St. Catharines City	623,750
Total	$11,360,363

The Proposed Welland-Bridgeburg line, via Humberstone, Port Colborne and Fort Erie, concerns Crowland, Humberstone and Bertie townships; Humberstone, Port Colborne and Fort Erie villages, and Welland and Bridgeburg towns. The route proposed is as follows,—From East Main St., Welland, southward over South Main St. to east of the Welland Canal at the Michigan Central Rd. bridge, thence along the east bank of the canal through Humberstone and Port Colborne. From Port Colborne eastward, midway between the G.T.R. and Lake Erie, as far as a point south of Sherks, thence southeasterly to the northern limits of Crystal Beach, thence to the south side of the G.T.R. a short distance east of Ridgeway, thence following the G.T.R. on the south side past Crescent Beach and Erie Beach, thence parallel to the old Huron & Erie right of way to Fort Erie. From Fort Erie northward along Niagara St. as far as the north boundary of Fort Erie, thence along the north side of the Erie & Niagara Ry., thence northward across the G.T.R. and M.C.R. to Central Ave., Bridgeburg.

Following is an estimate of the cost of construction, equipment and operation, with estimated operating revenue,—

Capital Cost:	
Right-of-way, track construction, and buildings	$1,566,216
Sub-stations, car shops and rolling stock	642,500
	$2,208,716

Annual Operating Revenue:	
Passenger revenue	$176,490
Freight revenue	149,850
Miscellaneous revenue	6,660
	$333,000
Annual Charges:	
Operating expenses	$160,214
Maintenance expenses	44,351
Operating and maintenance charges	$204,565
Interest charges	110,435
	$315,000

The class of construction covered by the estimates is based upon a single track line of 80 lb. rails on private right of way for practically the entire distance. Ample allowance is said to have been made to cover a very high class of construction, and 80 lb. steel rails, concrete culverts, steel bridges and other similar structures are designed to carry, in an economical manner, the heaviest types of freight cars now in use on steam railways. Proper station facilities, freight sheds and team tracks have been provided for in the various municipalities. The 1,500 volt direct current system of power supply has been estimated upon, with 2 permanent substations located between Welland and Bridgeburg, and 1 portable substation, which can be located at various points along the line as required by the traffic. By using the 1,500 volt system and 2 permanent substations ample power supply will be provided for moving heavy freight trains. The following equipment has been estimated upon,—

9 3 compartment, all steel, passenger motor cars.
12 passenger trail cars
4 motor express cars.
50 freight cars.

The furnishings of the passenger cars will be of a high standard, and approximately 500 h.p. in motor capacity on each car will allow high speed even when a trailer is hauled. The freight traffic is intended to be transported by motor express cars, as it was felt that this type would be best suited to the particular local conditions existing between Welland and Bridgeburg. However, if it is found, when the line is actually placed in operation, that 50 or 60 ton steel locomotives would take care of the business in a more economical way, there would be ample allowance in the estimates to provide for the slightly higher cost.

It is anticipated to give practically hourly service between Welland and Bridgeburg. Limited cars, making few stops between termini, will probably be run at certain hours to take care of through business, and the running time of these cars between Welland and Bridgeburg should, it is claimed, be much below that now in effect on the G.T.R. Local cars will be run in addition to the limited trains and these will stop at approximately one mile intervals. The 4 motor express cars provided for in the estimates will be used to handle from 10 to 15 freight cars, and it is anticipated that from 2 to 3 round trips a day will be required to handle the freight business. These express cars would also be used with the passenger cars mentioned above, or with rented cars, to carry excursions to Crystal Beach or other points, and in addition would frequently be used to handle light package, freight and milk business. Frequent stops will be made along the line to collect farm produce, and these points can be made convenient to the residents of the different sections.

Following are municipalities concerned in the proposal, with the amounts of debentures to be issued by each, for deposit with the commission,—

Crowland Tp.	$203,449
Humberstone Tp.	629,755
Bertie Tp.	782,666
Humberstone Village	66,194
Port Colborne Village	141,297
Fort Erie Village	128,007
Welland Town	166,926
Bridgeburg Town	90,422
Total	$2,208,716

Answers to Questions on Electric Railway Topics.

Following are answers by Canadian electric railway officials to questions sent to the American Electric Railway Association's question box:—

Cost of Carbon Brushes.—What is the cost of carbon brushes for various types of motors, on a 1,000 car mile basis?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.—I have no information on comparative cost of brushes for different types of equipment, but careful tests show an average of approximately 1c per motor per 1,000 car miles. This is with high grade brushes and slotted commutators. Note—42½% duty on carbon products.

Headway of Cars on Joint Tracks.—(a) Where two or more lines unite as they approach the business district, and operate for a considerable distance over the same track, do you attempt to make an even headway between the cars of these different lines on such joint track, or do you let them run independently of each other, regardless of the resultant headway? (b) Suppose you have two lines uniting as above with eight cars on each line, the best headway the first line can maintain is 8 minutes, while the second line can maintain a 7½ minute headway, would you put the second line on an 8 minute headway, giving it a layover each trip, in order to have a 4 minute headway on joint track, or would you hold each line to its best schedule, disregarding the service on joint track?

A. Gaboury, Superintendent, Montreal Tramways Co.—(a) Yes, as much as possible, except on a street which is a neck through which several lines pass and where the headway is already very close, in which case we aim to keep an even headway between two of the passing lines which run to districts closely related. (b) Would consider it good policy to allow layover and maintain even 4 minute headway. This would not only encourage local short haul traffic, but would help general loading.

Time Points in Operating.—(a) Do you maintain time points along your line; (b) if so, how far apart are they; (c) in establishing time points, what basis do you use in determining the amount of time to be used between them; (d) do you require a rigid observance of time points; (e) how do you determine if they are being observed, and what means do you employ to force observance?

A. Gaboury, Superintendent, Montreal Tramways Co.—(a) Yes. (b) Approximately 5 minutes apart in centre of city and 10 minutes in outer parts of city. (c) Running time is computed to agree with civic regulations and headway of line and time between time points is established arbitrarily and then corrected by observation of actual running of the cars. (d) Yes. Running time between points is changed frequently to suit changing conditions of traffic, temperature and rail, and the service demands that cars pass time points on time so as to provide correct headway where needed. If on a 3 minute headway one car passes a time point one minute ahead of time, he leaves part of his load to the car following, which will likely be put late through heavy loading, thus backing him up on the car following him and taking part of his load, result being that first and third cars are practically empty and second car is packed with consequent discomfort and dissatisfaction to our patrons. (e) By our inspectors or roadmasters, who check the cars on the lines in their districts.

Disciplining for Minor Accidents, etc.—Do you apply the same disciplinary methods to new as to old trainmen when they are responsible for minor accidents or breach of rules, or do you have a stated period, during which such infractions are considered cause for further instruction, rather than penalty?

A. Gaboury, Superintendent, Montreal Tramways Co.—Trainmen for the first 90 days of service are considered as being still attached to the training school, and for all minor infractions of the rules are sent there for further advice or instruction. For a serious offence they are disciplined in the regular way.

Automobile Accident Reports.—Have any member companies made it a practice to have conductors report the license numbers of automobiles whose drivers are reckless, or who are responsible for near accidents, with the idea of reporting them to the owners, to automobile clubs, or to the police; if so, what results have been obtained?

A. Gaboury, Superintendent, Montreal Tramways Co.—We have been doing this for some years, and have obtained very excellent results. On receipt of report from our car men or inspectors, whether for a near accident, reckless or wilful delay by drivers of autos or vehicles, we take up the matter with the owner by letter, and if necessary, send one of our staff to interview. In nearly all cases we have found owners ready to meet us more than half way, and have found that this helped not only in reducing accidents but in engendering a better feeling on the road.

One-Man Electric Cars in Moncton, N.B.

The Moncton Tramways, Electricity & Gas Co. started, Nov. 27, to operate one-man p.a.y.e cars. They are old style, single truck, with short platforms, longitudinal seats, double sliding doors in bulk heads, stationary steps and doors on both sides of vestibules. The left hand side of each vestibule has been closed up permanently, the step having been taken off on that side, and folding doors have been installed on the right hand side of each vestibule. A Coleman no. 4 stationary fare box has been installed at the right side of the sliding doors on a standard made of 1 in. pipe. The Coleman Fare Box Co. made brackets to fasten on this standard and the fare box rests on the brackets, and can be transferred from one end of the car to the other, as the company has to operate from both ends at present, having no loops. International two dial registers for tickets and cash have also been installed. A rod runs through the car on both sides, to which connection is made with the register with connecting arms and a lever handle in each vestibule for operating the registers. On reaching the end of the line the motorman takes the fare box to the opposite end of the car, locks the back door and is ready to go ahead again. The company has had one of the cars on its suburban line equipped with this arrangement for some time and reports it as working nicely.

Regina Municipal Railway Earnings, Etc.

Following are the earnings, expenses, etc., for November, compared with those for Nov., 1915, and also the totals for 11 months ended Nov. 30.:—

	Nov. 1916.	Nov. 1915.	11 months to Nov. 30, '16.
Total revenue .	$19,366.88	$15,982.62	$189,065.84
Expenditure . .	14,933.31	14,659.93	171,508.81
Net earnings . .	4,403.57	1,322.69	17,557.03
Fixed charges .	8,022.96	8,466.61	89,335.90
Deficit	3,619.39	5,364.94	71,778.87
Average exp. per car mile without power . .	13.32c	14.53c	15.12c
Average exp. per car mile with power	18.62c	19.59c	20.31c
Cost per k.w.h.	1.41c	2.02c	1.69c
Cost per car mile	5.29c	5.04c	5.19c
Platform wages per car hour .	71.43c	73.14c	72.08c
Expenses less fixed charges percentage of earnings			77.23%
Expenses with fixed charges percentage of earnings			118.72%

The Montreal Tramways Co's Franchise.

The Montreal Board of Control has appointed B. J. Arnold, Chicago, Ill., to advise it as to electric railway matters in connection with the investigations now in progress with respect to granting the company a new franchise. This appointment was approved by the City Council, Dec. 8, and $10,000 was voted to cover the cost of Mr. Arnold's investigation and report.

Public interest in the tramway negotiations was given a new turn recently when a petition was presented in a Quebec court asking for the holding of a judicial enquiry into the administration of civic affairs generally and particularly with matters connected with negotiations with the Montreal Tramways Co. as to its franchise. The court directed Justice McDougall to hold the enquiry, and Dec. 11 was fixed for its opening. The city opposed the holding of the enquiry, and on Dec. 13, asked the court to issue a writ of prohibition to prevent Justice McDougall from proceeding with his investigation. Justice McDougall has ordered the city to pay into court $2,000 on account of the expenses of the court, and has adjourned his investigation pending the result of the hearing of the city's application.

As a result of representations made to the Quebec Government, the Quebec Legislature passed an amendment to the City of Montreal's act and affecting the tramways franchise. The addition to the act is as follows:— (1) A commission composed of Senators J. P. B. Casgrain, of Montreal, and C. Beaubien, of Outremont, and J. Cockburn, of Montreal, is created to prepare a contract between the city and the Montreal Tramways Co., as provided for by sections 14 and 15 of chapter 77 of the acts of 1911, and for this purpose it has the power and rights which the act confers upon the city. The contract prepared by the commission will come in force after having been signed by the commission or the majority of its members, the day it is signed by the President and the Secretary of the Montreal Tramways Co., duly authorized by the directors of the company, and will bind the company and the city for 36 years from the time of its coming into force, except for changes and modifications which may be made from time to time by the mutual consent of the city and the said company. Counting from the same date, this contract will annul and replace all other contracts between the city and the company for similar purposes relative to the same territory. At the expiration of the 36 years and at the expiration of each period of 5 years subsequent, the city will have the right, upon giving six months notice to the company in the 12 months which immediately precede the expiration of the 36 years as well as similar notice of 6 months and the same conditions at the end of each 5 years subsequently, to appropriate the company's lines as well as the real estate, material and cars belonging thereto, and necessary to the running of the tracks, by paying the value as fixed by arbitrators and 10% more for good will. The arbitrators will be named one by the city, one by the company, and a third by a judge of the Superior Court for the district of Montreal. The expenses incurred by the commission in the exercise of its functions, as well as the salary of the commissioners, secretary, experts, and all other persons it may employ, will, when they become due, be determined and approved by the Lieutenant Governor in council, and paid half by the city and half by the company.

Toronto Railway Company Increases Wages.

Although the agreement between the Toronto Ry. and its employes, in regard to wages, does not expire until June 16 next, the management announced, Dec. 21, that it had decided to increase wages of conductors, motormen, shedmen and repair men 2½c an hour, and car washers 1½c an hour, the increase to date from Nov. 1. The new rates are as follows:—

Conductors and motormen, 1st year, 26c; 2nd year, 28c; 3rd year, 30c.

Shed foremen, 30c; operating shedmen, i.e., men who operate cars and do general shed work, 27c; shedmen doing general shed work, but not operating cars, 26c; car washers, 25c.

Motor and truck repair men, 1st year, 26c; 2nd year, 28c; 3rd year, 30c.

In announcing the increases, the General Manager, R. J. Fleming, made the following statement:—"For some months the management has noted the steady increase in the cost of living contrasted with the prices of last year, when the wage agreement was made, and since October last has had under advisement the question of wages paid by the company under that agreement. Two courses were open to the company: one, to adhere to the agreement and allow the present wages to obtain until the expiry o fthe agrement in June, 1917; the other, to deal with the wages this year in the same manner as if the agreement had expired. After due consideration the directors chose the latter course, and decided to grant such a liberal increase in wages as they felt certain should effectually obviate any agitation for a further increase at the expiry of the agreement.

"Employes will remember that the company's rates of fares are permanently fixed, thus placing it in an entirely different position financially to a manufacturing or other concern, which can add an increase in wages to the price of its product, so that the increase is really paid by the purchasers, the public. This company cannot charge its passengers an extra fare to cover additional costs of operating due to increase in wages or increased costs of other commodities that are necessary to the running of the road. Thus the burden is one-sided, the benefits going to the public and the employes only. The increase will date from Nov. 1, 1916, thus giving the employes the additional advantage of enjoying it during the unexpired term. Employes in other departments who have not had an increase in wages since the agreement was signed will be dealt with upon their merits. In taking this action the company has been influenced solely by the change in living conditions and the additional burdens upon the employes as a result of the war."

London and Port Stanley Railway Finances.

Canadian Railway and Marine World for December contained general particulars of the L. & P.S. Ry. operating results of the year ended June 30, showing a surplus of $18,474.14 after paying taxes, interest, rental, sinking fund and patriotic contributions. Following are fuller details,— —

EARNINGS	
Passenger	$114,869.62
Baggage	570.23
Parlor, sleeping and special car	43.00
Mail	1,039.50
Express	1,630.74
Milk	20.40
Freight	130,897.24
Switching	18,583.24
Miscellaneous transportation	138.00
Storage	37.33
Demurrage	1,265.00
Rent of tracks and facilities	6,386.65
Rent of building and other property..	2,570.20
Miscellaneous	3,007.17
Gross earnings	$281,058.32
EXPENSES	
Maintenance of way and structures . .	$12,573.03
Maintenance of equipment	14,138.76
Transportation	109,491.20
General and miscellaneous	39,898.89
Total operating	$180,619.88
Fixed charges	76,524.72
Total expenses	$257,144.60
Red Cross donation	$1,300.00
Sinking fund for 1915	4,139.58
	$262,584.18

The expenditure on construction account during the year was as follows,—

Engineering and superintendence . . .	$ 25,480.54
Right of way	2,306.37
Other land used in electric railway operations	8,000.35
Grading	30,689.16
Ballast	20,948.49
Ties	41,826.29
Rails, rail fastenings and joints	127,041.13
Special work	8,847.93
Track and roadway labor	35,474.50
Paving	507.89
Roadway, machinery and tools	3,811.24
Bridges, trestles and culverts	19,018.16
Crossings, fences and signs	16,484.85
Signals and interlocking apparatus....	2,575.33
Telephone and telegraph lines	8,029.82
Poles and fixtures	72,332.83
Distribution system	126,281.70
General office buildings	413.57
Shops and car houses	23,682.39
Stations, miscellaneous buildings and structures	25,133.40
Wharves and docks	53.07
Park and resort property	8,088.42
Cost of road purchased	10,000.00
Reconstruction of road purchased	46.66
Other expenditures, way and structures	134.05
Passenger and combination cars	102,012.58
Freight, express and mail cars	8,326.90
Service equipment	4,293.26
Electric equipment of cars	66,799.22
Locomotives	80,049.43
Shop equipment	4,904.65
Furniture	4,225.48
Miscellaneous equipment	56.76
Substation equipment	1,188.17
Law expenditures	845.06
Interest	13464.53
Insurance	1,257.87
Miscellaneous	3,932.07
	$908,562.12

The Montreal Tramways Co. has discontinued its service on Dorchester St., Montreal, during the construction of certain work on the Canadian Northern Ry. terminals.

Moose Jaw Electric Ry. Employes' Wages.

Canadian Railway and Marine World for December contained the report on this matter by a Board of Conciliation and Investigation appointed by the Minister of Labor under the Industrial Disputes Act. As then stated, the company refusto accept the award, and the men subsequently accepted the offer as made by the company in July, 1916, fixing conductors' and motormen's wages per hour as follows:—1st 6 months, 26c; 2nd 6 months, 26½c; after 1st year, 28½c; after 2nd year, 31c. Motormen having two years experience on other roads and whose ability is satisfactory to the Superintendent will be paid 27c from the commencement of employment. Five cents extra an hour will be paid for May 24, July 1, Civic Holiday, Labor Day, Good Friday, Thanksgiving Day, Christmas Day and New Year Day. The other principal terms of the agreement are as follows:—Uniforms will be supplied by company. Cost of first uniform and overcoat to be borne half by company and half by employe. Should employe leave within 12 months he must pay full cost of uniform. Subsequent uniforms will be supplied by company one per year free; subsequent overcoats will be supplied by company, to remain company's property, and to be returned to company upon employe leaving if so requested. Stools will be provided for motormen, their use being restricted in certain districts. Violation of rules governing them will entail dismissal and a total of five violations will mean discontinuance of stool privileges.

The company reserves the right to terminate employment of any employe for violation of rules and regulations. For minor offences warning will be given, for more serious offences suspension or dismissal. The following will be treated as serious offences:—Acts or words of disloyalty to the Empire; acts or words tending to bring the company's officials or any employe into disrepute or dishonor, or tending to disrupt the harmony of the employes or the system; drinking when in uniform or drinking when on cars or within three hours of going on duty; destruction of property, accidents through carelessness or neglect, missing fares, carrying people free, using stools on portion of route not allowed, violating explicit instructions as to manner of fare collection or violation of any rules now in force or which may hereafter be in force. Employes may be disciplined, suspended or dismissed without notice at the Superintendent's discretion. The employes' committee shall consist of 3 employes chosen by the Superintedent and satisfactory to the employes. Any employe disciplined or dismissed may have his case taken up by the committee with the company.

Fifteen minutes will be allowed men taking car from barn and 15 minutes for returning car to barn at night. This time is allowed so that crew taking car out will inspect it, seeing that bells, lights, brakes, sanders, etc., are in working order, and that car is supplied with trolley, pickup, sand, coal and proper destination boards. Fires must be lit only after pulling car from barn. On returning car to barn, anything amiss with equipment or repairs to be made must be reported in trouble book. Dampers in stove must be closed, check draft opened and check in pipe closed. Fires to be regulated so that on cars returning to barn fires will be low. Spare men reporting for duty and not obtaining a run will be allowed one hour. When men making regular runs fail to report at specified time the run will automatically revert to spare man in order of seniority.

Order of seniority will be recognized by length of time in one position. An employe desiring to change from conductor to motorman, or vice versa, will lose his seniority and start at foot of list but retain rate of pay. If the change is made at the company's request, seniority will be lost as to position changed to, but if at any time the employe is changed back, or voluntarily wishes to change back, the original seniority in the original position will be retained, and service put in in new position at company's request will count as service in original position.

The British Columbia Electric Ry. and the Jitney Traffic.

After considerable discussion and hearing the views of representatives of the British Columbia Electric Ry., and of the jitneymen, the Vancouver, B.C., City Council, on Dec. 8, passed part of a new set of regulations affecting jitney traffic in the city. The regulations are made much more drastic than those formerly in operating, and it was proposed to raise the license fee from $25 to $50 for 5 seat cars and from $50 to $100 for 7 seat cars, with an increase in the drivers' licenses from $2 to $3 a month. Subsequently the regulations were completed and it was hoped to have the bylaw finally passed by Dec. 31, so that the licenses for 1917 could be issued under it.

The jitneymen, on Dec. 13, asked the council to postpone the coming into operation of the new regulations. In the course of the discussion, J. A. Kerr, President of the Jitney League, is reported to have said that the league had not attempted to interfere or in any way retaliate against the British Columbia Electric Ry. in that company's legitimate transportation business, but that should the company persist in its efforts to have the jitney league put out of business, then its members would seriously consider finding ways and means of making the company live up to its own rules and regulations.

In connection with this statement, W. G. Murrin, Assistant General Manager, B.C.E.R., is reported to have said in an interview, Dec. 14:—"It is grossly incorrect, as stated by the jitney men, that my company is trying to 'put the jitney out of business.' We are asking solely for regulations on a par with those we operate under and as a matter of fact those proposed are not nearly so exacting as ours are. We did not come forward to the city council with our requests until the council invited us. I believe that the public will view this matter in the right light and insist on regulations which will protect their own rights and not those of the jitney operators only. The B.C.E.R. operates under very strict regulations, which have for their purpose the obtaining of a transportation service which fills the needs of the public, which safeguards the lives of the public, and caters to the general welfare of the community. We are asking no more than that the regulations we operate under or their equivalent be placed on the jitney. If this jitney league is permitted to run as it likes, it cannot be said to fill the position of a transportation system on which the city can depend. It is obviously unfair for one means of transportation to be saddle with obligations and its competitor not, and that this condition cannot continue will be clear to every impartial person. The B.C.E.R. is required to give transfers and to run regular services of cars in the rush as well as the slack hours, on week days, Sundays and holidays and at many tims that it does not pay to run cars. It pays more than 5% of its gross earnings to the city, whereas the jitney pays less than 1%, and a great deal of this is eaten up by the extra expense placed upon the city. The company pays heavy bridge rentals and maintains its own tracks at a cost of $40,000 a year. We must carry city officials and firemen and policemen on our cars free. The jitney has no such obligations. If the jitneys are allowed to compete with an established transportation system on an unfair basis, taking the smooth without the rough, and carrying few of the burdens the street railway must carry, there can be only one result. A severe blow will be dealt to capital which may invest in Vancouver at some future date. The jitney men are asking the city council for protection. It is the street railway, having been promised protection in the form of a franchise, that is entitled to first consideration."

Electric Railway Track Laid in 1916.

Below is a preliminary table showing track laid on electric railways in Canada during 1916. It is not published as a complete one, owing to the fact that some of the companies have not yet replied to the circular sent, but it is believed to be approximately correct. The * mark indicates that the figures given are estimated:—

	Miles.	
Brantford and Hamilton Ry.—		
Market St. to Water St., Brantford..	0.25	
Calgary Municipal Ry.—		
17th Ave. and 28th St. W. to Sarcee Military Camp	3.00	
4th Ave. and Centre St. to Sunnyside	0.50	
		—3.50
***Edmonton Redial Ry. or Edmonton Interurban Ry.—**		
Connection between two lines near G. T. Pacific Ry	1.00	
Hamilton St. Ry.—		
Kenilworth Ave. and Burlington St. to Barton St.	0.50	
***London and Port Stanley Ry.—**		
Richmond St. to Ridout St., London...	1.00	
London St. Ry.—		
Egerton St. to West St.	0.41	
Quebec Ry., Light and Power Co.—		
C.P.R. Cross'g to St. Charles Cemetery	0.50	
5th St. to 4th St.	1.25	
3rd Ave. to Abattoirs	0.25	
		—2.00
Regina Municipal Ry.—		
C.P.R. Arcola line to 16th Ave.	0.72	
4th Ave. to Standard Ave. and Winnipeg St.	0.58	
		—1.30
Sarnia St. Ry.—		
St. Clair and Christina Sts. to Clifford and King Streets	0.50	
***Saskatoon Municipal Ry.—**		
On 25th St. Bridge	0.23	
Three Rivers Traction Co.—		
Cap. de la Madeleine extension	3.06	
Toronto Civic Ry.—		
St. Clair Ave. to C.P.R. tracks on Lansdowne Ave., double track	0.61	
Toronto Ry.—		
New entrance to Exhibition	1.91	
Yonge St. gap	0.14	
Woodlawn Ave. extension	0.04	
		—2.09
		16.45

The London St. Ry., in addition to the new line above mentioned laid 2,000 ft. of second track on Dundas St. from the exhibition grounds to the G.T.R. interswitching track.

The Sandwich, Windsor & Amherstburg Ry. laid 2,200 ft. of entirely new double track line on London St. West, Windsor, replacing a single track line; this, however, does not increase the company's track mileage.

Electric Railway Projects, Construction, Betterments, Etc.

Brantford & Hamilton Ry.—We are officially advised that track has been laid on the extension from Market St. to connect with joint station with the Lake Erie & Northern Ry. on Water St., Brantford, Ont., 0.25 of a mile. (Dec., 1916, pg. 502.)

British Columbia Electric Ry.—The North Vancouver, B.C., City Council has under consideration a plan for securing a connection between the B.C.E.R. and the Pacific Great Eastern Ry., under which the B.C.E.R. would be the distributing agency in the city. The only difficulty in the way of the project is the transportation of heavily loaded cars on some of the streets where there are steep gradients. (Dec., 1916, pg. 502.)

Edmonton Radial Ry.—A press report states that the acting City Engineer of Edmonton, Alta., and the Traffic Manager of the E. R. Ry. are investigating the advisability of constructing a belt line in the centre of the city at a cost of $40,000. (Dec., 1916, pg. 502.)

Hamilton St. Ry.—The new Kenilworth St. line was opened for traffic Dec. 19. G. Waller, General Superintendent of Buildings, is reported to have stated that until early in the new year cars would be operated on the new line between 7 and 8 a.m., and between 4 and 6.30 p.m. Early in the new year a regular belt line service will be put in operation, thus forming a third belt line in the city. (July, 1916, pg. 295.)

The London St. Ry. has, we are officialy advised, completed track laying on Dundas St., London, Ont., from Quebec St. to the G.T.R. interswitch track, the work including the paving of the tracks. An extension of 2,000 ft. from Egerton St. to West St., which was opened for traffic Dec. 1, is not to be paved. (Nov., 1916, pg. 460.)

London & Port Stanley Ry.—We are officially advised that the London Railway Commission is considering the construction of 600 ft. of retaining wall at Port Stanley, Ont., to protect the right of way in front of the station from the encroachments of Kettle Creek. The estimated cost of the work is $6,500.

The 65 ft. addition to the shops at London, with a one story addition for an office section, is expected to be completed early in January. A bath house costing $25,000 at Port Stanley is under consideration. (Nov., 1916, pg. 460.)

The Quebec Ry., Light & Power Co. expected to have track laid by Dec. 31 on the following extensions,—C.P.R. crossing, St. Vallee St. to St. Charles Cemetery, 0.50 mile; 5th Ave., along 3rd Ave. to 18th St., along that street to 1st Ave, and down that avenue to 4th St., 1.25 miles; 3rd Ave. and 18th St., along 18th St. to 4th Ave, and up that avenue to Abattoir, 0.25 mile. The work has been done by the company's own forces.

We are also officially advised that the company has under consideration a project for building a line from 3rd Ave. and 5th St. along Beauport Road to the city limits, 1.50 miles. (Nov., 1916, pg. 461.)

Regina Municipal Ry.—We are officialy advised that during 1916 the following additional lines have been laid,—From the C.P.R. Arrico line, from Atkinson St. to 16th Ave., 0.72 of a mile; and from Scott St., from 4th Ave. to Standard Ave., and along that avenue to Winnipeg St., 0.58 of a mile, a total of 1.3 miles. (July, 1916, pg. 295.)

The Sandwich, Windsor & Amherstburg Ry. is, we are officially advised, putting up a building in Windsor, Ont., to be used for freight and express purposes.

We are officially advised that the new building to be erected on London St. West, Windsor, adjoining the power plant and car barns, will be 26 x 100 ft., 2 stories high in front. The basement will be fitted up for lavatory purposes; on the ground floor there will be the Superintendent's office and an office for the freight and express department, the top floor, about 26 ft. square, will be used as an assembly room for motormen and conductors. The main part of the one story rear of the building will be used for receiving and delivering freight and express. In the rear of this will be a store room for the track department. Under the rear of the building will be the overhead department, with room to run automobiles or trucks under the building from the rear. This will also be used as a stockroom for the overhead department. Each of the different parts of the building behind the freight office will be about the same dimensions, about 25 x 25 ft. The building will be of brick and will be finished as soon as the weather permits. (Oct., 1916, pg. 425.)

The Sarnia St. Ry., we are officially advised, laid in 1916 an additional half mile of track from the corner of St. Clair and Christian Sts. to the corner of Clifford and King Sts., Sarnia, Ont. (Aug., 1916, pg. 338.)

The St. John Ry. is demolishing the buildings on a wharf at St. John, N.B., purchased recently from W. B. Tennant. It is reported that a deep water berth will be made at the face of the wharf and a coal handling plant located on the wharf for the company's purposes. (Nov., 1916, pg. 461.)

Sudbury-Copper Cliff Suburban Electric Ry.—We are officially advised that the company has under consideration a proposal to build an extension to Murray Mine, about 4 miles west of Sudbury, Ont., but a definite decision has not been reached. The company is also contemplating the erection of a new car barn. (Dec., 1916, pg. 503.)

Three Rivers Traction Co.—We are officially advised that of the total of 7.01 miles of track there were laid during 1916, 3.06 miles, constituting the line to Cap de la Madeleine, Que. The extension was opened for traffic Nov. 21, when a 20 minute schedule was put in operation. (Dec., 1916, pg. 500.)

Toronto and York Radial Ry.—We are officially advised that while plans for a terminal station at North Toronto are under consideration, they have not been finally approved. It is the company's intention to put in during the winter should weather conditions permit, 2 temporary tracks from Yonge St. to take care of the long distance passenger traffic.

Toronto Civic Ry.—We are officially advised that the addition to the car barns on St. Clair Ave. is 42 ft. 7 in. x 198 ft., and is almost an exact duplicate of the present barn. It has been erected parallel to the original barn, the windows in the south wall of which have been bricked up and form a fire wall between the two buildings. Each barn has 3 tracks, with accommodation for 3 cars on each track. There are pits under all the tracks in the new structure. The cost of the work is approximately $25,000, which includes a few alterations to the old barn and the addition to and extension to the old heating plant. The addition in general is of steel framework with the walls faced on the outside with red brick. (Dec., 1916, pg. 460.)

Toronto Suburban Ry.—The changing of the gauge from 4 ft. 10⅜ in. to 4 ft. 8½ in. has been completed on all the old portions of the system between Lambton and Bathurst St., Toronto, the Crescent section and the branch to Weston and Woodbridge. The cars have also been changed to the new gauge by substituting new axles and wheels.

Progress is being made with the stringing of the wire and other finishing up work on the new standard gauge line built from Lambton to Guelph, which it is hoped to have opened for traffic early in the spring, if not before. (Dec., 1916, pg. 460.)

Transcona, Man.—A press report states that negotiations are practically completed with the Transcona Town Council, under which a 25-year franchise is to be granted for the building of an electric railway from Transcona to Winnipeg. The line, it is stated, is to be completed by Sept., 1917. Winnipeg men are said to be interested.

It was reported in our December issue that the Wininpeg Electric Ry. was negotiating with the Transcona Town Council in reference to the building of this railway. We are advised that no negotiations have taken place directly between the Winnipeg Electric Ry. and the Transcona Town Council with respect to the matter. There have been negotiations of which the company is cognizant about the matter, but nothing definite has yet been settled.

Employment of Women on British Columbia Electric Ry.—W. G. Murrin, Assistant General Manager, speaking at a meeting of the Manufacturers' Association in Vancouver, B.C., recently on the question of the employment of women in connection with the war situation, stated that the company had met with some difficulty at first in getting men to fill vacant places, but experienced no trouble at present. The company, however, had an agreement with its men, which, while it did not specifically state that men only should be employed, still, no doubt, if a fair interpretation was given, inferred that men would be given the preference. Otherwise the company had no objection to the employment of women. Anything that added to the resources of the Empire should be considered and the male labor absolutely necessary for munition work should be given consideration. Duplication of labor should also be avoided, and in this connection, and he hoped that his remarks would be taken in the right spirit, there was a duplication of labor in transportation facilities in Vancouver that was not necessary at the present time.

Extra Fares in Detroit.—The U. S. Supreme Court at Washington, D.C., decided, Dec. 11, that the Detroit United Ry. may charge extra fares for transporting street railway passengers beyond the old city limits in the towns of Greenfields, Grosse Point, and Fairview, Mich., annexed to the city, and it was also held that the company need not sell reduced rate tickets during workingmen's hours in the annexed territory.

Quebec Railway, Light & Power Co's Employes' Wages, Etc.

The Board of Conciliation and Investigation appointed by the Minister of Labor, under the Industrial Disputes Act, on the application of the Q. R. L. & P. Co.'s conductors and motormen, presented a unanimous report Dec. 6 recommending that the men receive from Dec. 1, 1916, an increase of 2½c an hour, making the new scale of pay per hour as follows: 1st year 21c, 2nd year 22c, after two years 24c, after 7 years 26c, the agreement to be for 3 years, from Dec. 1, 1916. The other principal provisions of the agreement are as follows: Overtime after the regular day's work, and all special work which they may be called upon to perform after the distribution of the regular work, to be paid 2c an hour extra. An employe relieved from work before the regular hour, by a company's official, to be paid for time he is supposed to make, except in cases of serious misconduct justifying his immediate suspension or dismissal. No employe to be required to work more than 10 hours a day without necessity. Every employe to be entitled to at least 2 hours rest after working 6 consecutive hours. Employes to be entitled to rest on Sundays, each in turn, except in cases of necessity. An hour is to be allowed every spare man who reports regularly at the time of changing crews on any day and who has not secured any work. Twelve hours work a week is assured to all employes who thus report.

For labor conventions in Canada, funerals of co-employes, Labor Day and national holiday, leave of absence shall be given 3 conductors and 3 motormen, provided request is made in advance and men found to relieve them. Leave of absence for conventions not to exceed 8 days.

All conductors and motormen to be entitled to 2 uniform caps each year free of charge, 1 for summer and 1 for winter. First and second year men to pay half of cost of summer and winter uniforms. After second year uniforms to be paid for by company. Winter overcoats supplied in future to come down 6 in. below knee. Men not to be obliged to return uniforms supplied them free, when they leave the service. Detailed statement to be given any employe from whom part of wages is being held to pay for uniform.

Cars to have heaters, protecting frames for motormen, and on the sides of open cars, eaves to protect conductors against water falling from roof. Open cars to be only in service between May 15 and Oct. 1. Motorman's vestibule to be enclosed, heated in winter and supplied with curtain to prevent reflection. Conductors and motormen to be required to make only urgent and temporary repairs to brakes, sand boxes, motors, and trolleys. Cars to be supplied with bell from forepart to back of car for signals from motorman to conductor. Suitable and clean waiting room, properly lighted, ventilated and heated, to be provided for employes.

Reprimands to employes before public to be avoided as much as possible. An employe suspended or dismissed, on an unfounded complaint, and reinstated, to be paid full wages for all time lost. No employe to be dismissed on a complaint, or suspended, before being heard. Employes to be received by General Manager, to appeal from Superintendent's decisions, or to state any other dispute, after giving notice to the Superintendent. Employes to be free to belong to National Brotherhood of Street Railway Employes. At meetings of employes called by company's officers, communications and instructions to be given in both English and French. No employe shall be forced to accept a promotion. Actions taken in connection with the 1916 strike shall be abandoned and no further action taken in connection with it.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.—

	Oct. 1916	Oct. 1915	Oct.31,'16 Jan. 1 to	Oct.31,'15 Jan. 1 to
Gross	$573,644	$538,826	$2,202,570	$2,073,697
Expenses .	480,126	480,051	1,908,767	1,928,530
Net earnings	93,418	58,775	293,803	145,167

The percentage paid to the City of Vancouver for Nov., 1916, was $3,893.71 against $3,323.14 for Nov., 1915. Passengers carried on the city and suburban lines were 2,231,699 against 2,269,543 in Nov., 1915.

Cape Breton Electric Company:

	Oct. 1916	Oct. 1915	12 mths to Oct. 31, '16	12 mths to Oct. 31,'15
Gross	$36,466.20	$34,152.20	$387,757.87	$347,773.12
Exp's	18,204.89	16,891.18	227,251.19	205,636.89
Net .	18,261.31	17,261.02	160,506.68	142,136.23

Regina Municipal Ry.—In the report presented to the annual meeting of ratepayers recently by the city officials of Regina, Sask., the following references were made to the municipal railway:—"Operating expenses are slightly higher than for last year's period, but are some $35,000 less tha nin 1914. There is a surplus in operation of $13,000 compared with a deficit of $12,500 last year. The receipts show an increase of 23%, mostly accounted for by the greater passenger earnings, as the freight business has fallen off somewhat. The net improvement over last year's period in the street railway statement reduces the deficit $36,500, which reduction will be greater when the last two months of the year are accounted for. For the corresponding 10 months period of 1915 and 1916, the total passengers carried, the total car mileage, and receipts per car mile were: 2,908,339 and 3,756,645; 777,776 and 764,358; 16.15c and 21.07c resupectively."

Alderman Barr, in discussing the matter, said: "The most difficult utility with which your city has to contend is the street railway, and when your council has changed a deficit of some $13,000 into a surplus of $13,000 there is some reason to believe that we shall ultimately solve even this difficult problem. It is only fair to state in connection with last year that about $10,000 of the deficit referred to was incurred on account of the very difficult winter and heavy snow storms which kept the tracks continually tied up and had to be removed at no small expense."

The financial statement presented covered the 10 months ended Oct. 31, 1916. The net loss for 1915 after paying fixed charges, was $68,159.48 and the total revenue for the 10 months was $169,728.96. The operating expenses were $166,576.50, aind the fixed charges $81,312.94.

Saskatoon Municipal Ry.—The Saskatoon, Sask., Phoenix says:—"The street railway was completed in the latter part of 1912 and commenced operation in the early part of 1913. The total track mileage on a single track basis is 16½ miles, and the average number of cars operating is 12. The original fares were 6 tickets for 25c, but they were altered in 1915 to a straight 5c fare. The alteration has undoubtedly meant an increase in revenue rather than a decrease in the number of passengers carried. The operating expenses have been reduced from $137,334.11 in 1913 to $106,982.26 in 1915, a reduction of $30,395.85, or 22%. In spite of the reduction in operating costs, however, the loss increased from $19,664.83 in 1913 to $30,973.92 in 1915, due to the falling off in revenue the first six months of the latter year. The revenue during 1916, however, has so greatly increased that the railway is now being operated at a profit."

Toronto Railway:—

	1916	City percentage	1915	City percentage
Jan.	$473,784	$68,847	$471,226	$70,456
Feb.	470,704	70,614	440,313	66,047
Mar.	518,555	97,237	485,468	91,141
Apr.	496,172	99,234	467,701	93,540
May	500,516	100,103	468,953	93,790
June	467,086	93,417	450,582	90,116
July	469,845	93,969	449,108	89,821
August	474,824	94,964	447,985	89,593
Sept.	506,621	40,530	489,571	39,166
Oct.	487,954	39,036	461,682	36,934
	$4,866,061	$797,951	$4,635,575	$762,634

Toronto Ry., Toronto and York Radial Ry., and allied companies:

	Oct. 1916.	Oct.1915	Jan. 1 to Oct.31,'16	Jan. 1 to Oct.31,'15
Gross	$907,460	$792,001	$8,913,224	$7,942,106
Expenses	469,837	358,957	4,557,490	3,993,999
Net earnings	437,623	433,044	4,355,734	3,948,107

Winnipeg Electric Railway:

	Oct. 1916	Oct. 1915	Jan. 1 to Oct.31,'16	Jan. 1 to Oct.31,'15
Gross	$278,817	$286,146	$2,740,271	$2,799,595
Expenses . .	182,574	181,176	1,765,145	1,848,625
Net earnings	96,243	104,970	975,126	951,770

Trolley Express Service.—Business interests in and around Buffalo, N.Y., have for the past two years enjoyed a trolley express service on the International Ry. lines and it has become one of the factors in the general prosperity of that community. The idea of an express service on the electric line was conceived by the Chamber of Commerce and accepted by the railway company. Immediately a package express service was inaugurated between Buffalo, Lockport and Olcott, and by arrangement with the Lockport & Rochester Ry., to Rochester. The business done has doubled during the past year. It has been found cheaper to use this service for deliveries in the Tonawandas and other points between Buffalo and Lockport than to use delivery trucks, which had been the practice of many lines of business. Another feature of the service, affecting shippers along the line outside of Buffalo, is that during the period of navigation on the lakes they can make shipments to Cleveland and Detroit.

Toronto Ry. Overcrowding Case.—The Toronto Ry.'s appeal against the Supreme Court of Canada's decision, confirming a conviction for overcrowding on its cars, came before the Imperial Privy Council, Dec. 19. An objection was made to the appeal on behalf of the respondents, on the ground that the Judicial Committee of the Privy Council was not competent to entertain an appeal in reference to a criminal or quasi criminal matter. After some discussion it was arranged that the Attorneys General of Great Britain and Canada be communicated with as to their intention to be heard on the question of jurisdiction or to decide not to proceed further with the case, and the matter was adjourned sine die.

H. R. Mallison, of Montreal, who is connected with the Halifax Electric Tramway Co., addressed the Commercial Club at Halifax, N.S., recently, on "Some general ideas of how the H.R.T. Co. can and will benefit Halifax today and in the future."

Electric Railway Notes.

The Dominion Power & Transmission Co., Hamilton, Ont., has ordered a snow sweeper from Preston Car & Coach Co.

The Lake Erie & Northern and the Hamilton and Brantford Ry. joint station at Brantford, Ont., was opened for business Dec. 16.

The Three Rivers Traction Co. has received a combination freight car and snow plough from the Ottawa Car Manufacturing Co.

The Saskatoon, Sask., City Council decided, Dec. 13, to provide a shelter for convenience of street car passengers at the corner of Seventh Ave. and Princess St. at a cost of $150.

The Vancouver City Council is considering the acquiring of sites for the erection of power plants, so as to be in a position to have its own electric power when the British Columbia Electric Ry.'s franchise expires.

The Board of Railway Commissioners has approved of the agreement of the City of Brantford, Ont., as owner of the Brantford Municipal Ry., with the Lake Erie & Northern Ry., for the sale by the city of a portion of the Grand Valley Ry.

The Quebec Ry., Light & Power Co. is building 2 additional double truck, single end, p.a.y.e. cars, 40 ft. long over all, to be numbered 654 and 655, at its Ste. Anne de Beaupre shops. This makes 6 cars of this type built at the company's shops.

Alderman R. G. Duncan, of Fort William, Ont., speaking at a meeting at Port Arthur, Dec. 15, is reported to have said that it costs 6c to furnish a street car ride between Port Arthur and Fort William, in which both cities are interested, and for which only a 5c fare is charged.

The British Columbia Electric Ry. Social Club's annual gathering was held recently, W. G. Murrin, Assistant General Manager of the company and President of the club, being in the chair. The speakers included G. Kidd, General Manager; A. T. Goward, Local Manager, Victoria; G. Porter, Chief Electrical Engineer, and V. Laureson, Permanent Counsel.

Controller Cote, of Montreal, has been fined $1,000 for contempt of court in connection with the disregarding by the Board of Control of an injunction to restrain it from considering what is known as the Hebert proposal for a new franchise for the Montreal Tramways Co. This is the third fine inflicted, the other fines of a similar amount being upon Mayor Martin and ex-Controller Hebert.

On a motion to commit R. J. Fleming, General Manager, Toronto Ry., to jail for contempt, in not complying with the court's order to furnish certain information to the City of Toronto, Justice Middleton, at Toronto, Dec. 18, postponed judgment for three months, to enable the parties concerned to get together with a view to agreeing as to the information required and the best means of obtaining it.

A plan is under the consideration of the Port Arthur, Ont., Utilities Commission for the installation of a clock at the corner of Arthur and Cumberland Sts., on which there will be a dial showing the time of arrival at that point of cars travelling in all directions. As the clock will register the time and at the same time show when the next car is due, it is believed that the installation would be of great benefit.

The City of Vancouver, B.C., in order to safeguard the public at bridges in which there is a draw or swing span, has decided to adopt special protective devices. The Granville St. bridge is to be provided with them at once, and it is expected that the Connaught St. swing span over the Main St. bascule bridges will be equipped later. These devices are in addition to those already provided by the British Columbia Electric Ry.

It is reported that Montreal ratepayers will vote in September next as to whether the present system of city government, consisting of a mayor, board of control and aldermen, shall be abolished or not, and replaced by a commission, Lord Shaughnessy, Sir Alexander Lacoste and Senator Beaubien being spoken of as probable commissioners. It is also stated that a special subcommission consisting of Senators Beaubien and Casgrain, and F. J. Cockburn, of the Bank of Montreal, will arrange a new franchise for the Montreal Tramways Co.

Mainly About Electric Railway People.

W. Perrin, Superintendent, Metropolitan Division, Toronto & York Radial Ry., Toronto, has resigned.

L. P. McClelland has been appointed acting Superintendent, Metropolitan Division, Toronto & York Radial Ry., vice W. Perrin, resigned.

Lt. Col. G. C. Royce, General Manager, Toronto Suburban Ry., is endeavoring to enlist 1,200 men for the 255th Queen's Own Battalion, Toronto, which he has been authorized to raise.

J. J. Callahan, formerly Manager of Operation, London & Port Stanley Ry., London, Ont., has been appointed Superintendent, Oshawa Ry., Deseronto, Ont., vice D. A. Valleau, resigned.

C. W. Mott, heretofore Chief Dispatcher, Metropolitan Division, Toronto & York Radial Ry., has been appointed Superintendent of all the company's lines. Office, Toronto. This is a new position.

George Lowery, heretofore dispatcher, Metropolitan Division, Toronto & York Radial Ry., has been appointed Chief Dispatcher of that division, succeeding C. W. Mott, promoted to be Superintendent. Office, Toronto.

A. K. Bunnell, City Treasurer of Brantford, Ont., and a former member of the Brantford Railway Commission, lectured on municipal finance to the Epworth League of Colborne St. Methodist Church, Brantford, recently.

Sir Geo. White, who died at Bristol, Eng., Nov. 23, was largely interested in electric railways. The firm of which he was head manufactured electric railway cars, and was the first in England to manufacture aeroplanes.

A memorial tablet to the late Major N. C. Pilcher, General Manager of the Sherbrooke Ry & Power Co., and formerly Manager of the Port Arthur & Fort William, Ont., electric railway, who was killed on active service, was unveiled in St. Peter's Church, Sherbrooke, Que., recently.

C. B. Hare, police magistrate for Grantham, Port Dalhousie and Merritton, Ont., who died at St. Catharines, Ont., Dec. 13, aged 63, was also the Dominion Power & Transmission Co.'s special agent in the St. Catharines district, his duties mainly consisting of the general supervision of the company's real estate there.

J. W. Sutherland, who died in Hamilton, Ont., Nov. 29, aged 64, was a director of the Dominion Power and Transmission Co. He was one of the founders of the old company which developed power at Decew Falls, acting as Superintendent and Paymaster. Prior to taking an interest in electrical matters he was in the G.T.R. service at Midland and Niagara Falls.

Albert E. Pickering, who was appointed Manager, International Transit Co., Sault Ste. Marie, Ont., recently, was born at Brampton, Ont., Feb. 16, 1883, and from 1904 to 1914 was successively operator and lineman, Assistant Engineer, Superintendent, and Manager, Tagona Water & Light Co., and Lake Superior Power Co., later, the Algoma Steel Corporation's water power department; and from 1914 to 1916, Manager, City Water & Light Department, Sault Ste. Marie, Ont., formerly the Tagona Water & Light Co.

William George Murrin, who has been appointed Assistant General Manager, British Columbia Electric Ry., Vancouver, was born at Greenwich, Eng., Aug. 27, 1875, and prior to entering electric railway service in Jan., 1899, was, from 1891 to 1893, a student at the Finsbury Technical College, London, Eng., and from 1893, in the City of London Lighting Co.'s shops and stations. From Jan., 1899, to 1901, he was shift engineer, Middlesbrough & Stockton Tramway Co., Stockton, Eng.; 1901 to 1904, Superintendent of Power, London United Tramways Co., London, Eng.; 1904 to Mar., 1913, Works Manager and Electrical Engineer, same company; Mar., 1913, to Mar. 30, 1914, Mechanical Superintendent, British Columbia Electric Ry.; Mar. 30, 1914, to Nov. 30, 1916, General Superintendent, same company.

Quebec and Saguenay Ry.—Under the terms of the Dominion Act of Parliament providing for the purchase of the Quebec and Saguenay Ry., from the Quebec Ry., Light and Power Co., the price to be paid is to be fixed by the Exchequer Court. The matter came before the court recently, when, after statements had been made, Judge Cassels gave his decision on certain points. Counsel for the railway and the Government were asked to get together and agree upon as many points to be decided as possible.

Wood Block Paving.—The Moose Jaw, Sask., City Commissioners, in their report for the 10 months to Oct. 31, say that the use of wood block paving on the streets is not as satisfactory as in eastern cities, and "this is especially the case where attempts have been made to use wood blocks between street car tracks." The question of what type of street paving is to be adopted to overcome the admitted defects of wood block paving is being considered by the City Engineer.

W. P. Cook, Chairman, Public Utility Commission, Port Arthur, Ont., and M. M. Inglis, Manager, Port Arthur Civic Ry., who attended the American Electric Railway Association's annual convention at Atlantic City recently, presented a report upon improvements in machinery, etc., in connection with the operation of street railways and their adaptability to Port Arthur's needs, at a meeting of the Port Arthur Public Utilities Commission recently.

Hydro Electric Power Commission of Ontario.—In connection with the acquiring of lands in the Niagara peninsula for the new power development, it is reported that a railway line will be built for construction purposes along the route of the proposed canal.

Marine Department

Canadian Shipbuilding for Neutral Countries.

As indicated in a recent speech by the Minister of Marine, published in our last issue, permission has been given to 7 shipbuilding firms throughout Canada, for the construction and export of 21 steel steamships for foreign neutral countries, chiefly for Norway. As such construction and export was forbidden, special permission has to be granted in each case and orders in council have been passed, the following being a copy of the one issued to the Nova Scotia Steel and Coal Co., all being in identical terms, except for the date, name, and the number of vessels to be built.

"The committee of the Privy Council have had before them a report, dated Oct. 31, 1916, from the Minister of Marine and Fisheries, submitting that he has had under consideration an application on behalf of the Nova Scotia Steel and Coal Co., New Glasgow, N.S., for permission to export to Norway on completion two steel steamers, which they are about to construct in their shipyard at New Glasgow, for certain neutral owners who propose to place these ships under Norwegian registry. The Minister states that the applicants are prepared to give an assurance that such ships will not engage during the war in enemy trade, and that no demand on Great Britain for labor, material or machinery will be made in connection with the construction. The Minister recommends that authority be granted the Nova Scotia Steel and Coal Co., New Glasgow, N.S., to export the two steamers referred to in this present application, to Norway for Norwegian register in the name of neutral owners. The committee concur in the foregoing recommendation and submit the same for approval."

Following is a list of the firms to whom permission has been granted, with the dates of the orders in council, and the number of vessels allowed under the permit:—

Sept. 19—Polson Iron Works, Ltd., Toronto	2
Sept. 19—Thor Iron Works, Ltd., Toronto	2
Sept. 28—Canadian Vickers Ltd., Montreal	2
Nov. 3—J. Coughlan & Sons, Vancouver	1
Nov. 3—Western Dry Dock and Shipbuilding Co., Port Arthur, Ont.	3
Nov. 3—Wallace Shipyards, Ltd., Vancouver	4
Nov. 14—J. Coughlan & Sons, Vancouver	2
Nov. 15—Nova Scotia Steel and Coal Co., New Glasgow	2
Nov. 15—Polson Iron Works Ltd., Toronto	2

The foregoing list only covers 20 vessels, but it is understood that the Nova Scotia Steel & Coal Co. is building three vessels for export and not two as indicated above.

All of the vessels mentioned in this list are for Norwegian registry, with the exception of the two being built by Thor Iron Works, Ltd., Toronto, which are for export to the United States. As mentioned in another column certain of these contracts are being offered for sale in London, Eng., on behalf of the Norwegian interests concerned and in the case of sales being made, it is to be presumed that there will be a profit on the transactions for the principals, as well as a commission for the agents in the matter.

The Montreal Transportation Company Changes Ownership.

The Montreal Transportation Co.'s property and assets have been acquired by L. L. Henderson, heretofore Managing Director, and his associates. The only changes in the directorate at present, are the resignation of the President, Bartlett McLennan, the election of L. L. Henderson as President and Managing Director, and the election of A. A. Wright, Managing Director, St. Lawrence and Chicago Steam Navigation Co., Toronto, as Vice President and Treasurer. The other directors are Farquhar Robertson, A. Kingman, A. G. Thomson, H. A. Calvin, and A. E. Ogilvie.

The Montreal Transportation Co. was originally incorporated with an authorized capital of $300,000, and in 1903 obtained a new charter with an authorized capital of $1,000,000, with authority to make advances on goods stored, and to hold shares in other companies, which was an addition to the original business which was confined to transporting grain and general freight. The actual paid up capital stock of the company was $913,300, represented by a property in Kingston, Ont., its fleet of vessels and floating elevators, and the entire capital stock of the Prescott Terminal Co., Ltd., nominally $500,000. The company owns the following vessels: Steamships—Advance, Glenmount, India, Kinmount, Rosemount, Simla, Stormount, Windsor; Tugs—Bartlett, D. G. Thomson, Emerson, Glide, H. F. Bronson, M. P. Hall, Mary; Lake barges—Augustus, Burma, Dunmore, Hamilton, Hiawatha, Kingston, Lapwing, Melrose, Muskoka, Quebec, Selkirk, Thrush, Ungava, Valencia, Winnipeg; and a number of river barges and floating elevators.

Transfer of Vessels from the Canadian Register.

During the year ended Mar. 31, 1916, there were transferred from the Canadian register, 32 vessels of a total tonnage of 25,834 tons. Of these, 15 were transferred to foreign registers, 14 to the U. S., and 1 to Russia, and 27 vessels, representing 20,964 tons, were transferred to British registry outside Canada. The principal changes were the transfer of 21 vessels, 7,183 tons, to British registers in Newfoundland and Barbadoes..

The Deputy Minister of Marine in his annual report says it is generally understood that a large proportion of these transfers was made with the sole purpose in view of securing immunity from some of the provisions of the Canada Shipping Act, in which it is provided that no ship registered in Canada, over 150 tons, shall go to sea from any port in Canada on any voyage not being a coasting voyage, unless the master and first mate, or only mate, possesses valid certificates, and that no sailing ship over 150 tons, and no steamship registered in Canada, shall go from any port in Canada on any coasting voyage, or be licensed or allowed to ply on any Canadian water, unless the master possesses a valid certificate. In Newfoundland and Barbadoes there is no legislation of this nature, with the result that vessels registered there may engage in trade from any Canadian port without being obliged to secure the services of certificated masters and mates. It does not appear reasonable that vessels on the Canadian register and their owners should be thus discriminated against, and it is submitted that the matter should engage the attention of Parliament at its next session. It may be pointed out in further reference to this matter that while steamships registered in Canada engaged in foreign coasting and inland trade, are obliged to carry certificated masters, steamships registered in the United Kingdom may engage in all these trades without any obligation to employ certificated masters. Both the Merchant Shipping Act and the Canada Shipping Act appear to be defective in this respect. The former provides that every British foreign going ship when going to sea from any port in the United Kingdom, shall be provided with officers duly certificated. When, however, that ship reaches a Canadian port and undertakes to clear for a foreign, coasting, or inland voyage, it is under no obligation to employ certificated officers. In the revision and consolidation of the Canada Shipping Act, the result of which has been embodied in a bill which was introduced into Parliament in the 1914-15 session, provision was made to overcome this difficulty and remove what is in reality a discrimination against steamships on the Canadian register. Owing to the time of Parliament being so much occupied with matters relating to the war during the past two years, it has not been deemed inexpedient to take up the bill so far, but it is hoped to deal with the matter at the next session.

Coal Deliveries to Coasting Vessels on the Atlantic Coast.

A commission, consisting of W. E. Tupper, Inspector of Subsidized Steamship Services, of the Trade and Commerce Department; A. R. Tibbits, Officer in Charge of Harbor Commissions, Marine and Fisheries Department, and J. F. McDonald, Collector of Customs, New Glasgow, N.S., has been appointed under the provisions of part 1 of the Inquiries Act, to enquire into and report upon the conditions regarding deliveries of coal cargoes to coasting vessels in the Maritime Provinces. This action was taken at the instance of the Prince Edward Island Legislature, which complained that captains and owners of coasting vessels suffered hardship in having their vessels laid up during the winter, and to further hardship and financial loss owing to the long delays, often extending to several weeks, at coal delivering ports. It is pointed out that the greater part of the coal used in the province is imported in sailing vessels, and owing to the many shallow water harbors, must continue to be carried in vessels of shallow draught, and that by preventing these delays the building of coasting vessels could be profitably undertaken and an industry established that would be of benefit to the whole province.

Stranding of the s.s. Samuel Marshall.

An investigation was held recently by the Dominion Wreck Commissioner, Capt. L. A. Demers, at Quebec, assisted by Capts. C. Koenig and T. Gough, as nautical assessors. into the causes of the stranding of the Central Canada Coal Co.'s s.s. Samuel Marshall near Lark Reef at the entrance to the Saguenay River, Sept. 8. The judgment set out that the absolute trust and the possible misinterpretation of the duties and responsibilities of a pilot, caused two men, the master, W. A. Tulloch, and the mate, C. Ross, especially the master, to forget their duties to a most regrettable extent. When the vessel left Little Saguenay wharf, the master saw to her unmooring and headed her down the river. Although according to the system followed on the vessel, his watch was until midnight, he left the bridge and retired to his room between 10.30 and midnight, and went to sleep, without issuing instructions of any kind, leaving everything to the pilot; even the lookout was not sent to his post. If the pilot's version is true, that he sounded the fog whistle, it failed to bring the master on deck to his duty. It was only when the shock of grounding was felt, that he was awakened and proceeded to the bridge. The mate also went to sleep without advising someone to call him, basing himself on the tacit understanding that the watchman would do that without request. It was also considered by him as understood that the watchman or lookout man was to keep his lookout on the forecastle head, and such was not done on this occasion. While the court finds much to blame in the mate's conduct, there is an extenuating reason for leniency in his case, and causes his excuse that had he been called he would have been at his post, to be accepted. The master's conduct in leaving the bridge without giving orders of any kind, is astonishing. It is true that both he and the mate had been working all day, and there being no second officer, the mate had to be about constantly to see to the cargo and prepare the vessel for her trip. The master was also undoubtedly busy with the cargo, getting ship's paper in order, and many other details to which a master is in duty bound to attend. The situation being known that there was one officer short, and being satisfied that the vessel was to leave at a certain time during the night, it seems to the court that if either the master or the mate felt some rest was needed before sailing, some means could have been devised to secure that rest before the vessel sailed, but such was not thought of, the idea predominating, no doubt, that there was a pilot on board, and through a mistaken interpretation of responsibilities, a happy-go-lucky method was adopted; perhaps such is general, but only discovered when a casualty occurs.

The court, composed as it is, of members who have had a vast and varied experience in shipping matters, each member having been in command, realizes that in these momentous times crews cannot be selected as one would wish, and owners have found difficulty in obtaining sufficient men to run their vessels, and those found are generally deficient in qualifications and experience. These conditions apply to foreign as well as inland navigation. The wheelman and watchmen examined are young fellows who have not had sufficient training to understand their duties unless a superior officer is present, to guide, advise and instruct them. It was known by the master and mate, or should have been, that there was no light on the compass on the bridge. In view of the circumstances prevailing, of shortage and indifferent crews, it behoves the master and his official subordinates to redouble their vigilance and prudence and face conditions as they are found in a manly fashion. Weighing all details together, the court, without showing any undue severity, should deal at least with the certificate of the master, but in doing so, the intention to bring about a realization on the part of the masters and officers of their duties, would be nullified by the fact that the navigation season is nearly at an end, and a suspension of certificate would be fruitless. The court therefore exercises the other power it possesses, and condemns the master to pay two-thirds of the expenses of the investigation, and the mate the other third, the total being $123.70. In addition, both master and mate are severely reprimanded for their indifference. The court found the pilot, E. Langlois, in default for failing to acquaint himself with the so-called telegraph to the engine room, for not having insisted on the presence at his side of the responsible officer of the vessel, and for not making some attempt to supervise the courses he was giving, and the work of the wheelsman. His excuse that he thought some one in the wheelhouse was responsible for this, cannot be accepted. Owing to the circumstances already mentioned for not dealing with the master's certificate, the court fined the pilot $100, to be paid by Dec. 27, and cautioned him that should he come before the court again and be found in default, his license will be dealt with.

Hawking Canadian Shipbuilding Contracts.

The following letter which appeared in a recent issue of the Journal of Commerce, Liverpool, Eng., from Donald Macleod and Co., London, Eng., will, no doubt, be read with considerable interest by Canadian shipbuilders and others concerned in the welfare of the shipbuilding trade on this side of the ocean.

"We have the following contracts for new steamers for sale building in British yards (Canada) for Norwegian account, viz:—Three 8,800 tonners, Robert Dollar type, one delivery end July-early August, one October, and one November, building by Wallace Shipbuilding Co., Vancouver, and we can sell them at $145 a ton for the first steamer and $140 for the two later. Also two 7,000 tonners building by Vickers, Montreal, delivery end of 1917, for which we will try $135 a ton, all net to us.

"May we put on record here it seems to us absolutely disgraceful that it is possible for British colonial yards to take contracts to build ships for neutral countries when it is impossible for British owners to get reasonable deliveries from our home yards, and when we need every ship we can possibly secure in the near future to be under British control, and if the above is an example of how Britain is preparing for 'The War After the War,' the result can only be disastrous.

"British owners can still secure these contracts, but now only after the Norwegian holders have taken their profit. Surely this is a criminal loss of foresight on the part of our Government, who give no encouragement to British owners to build ships abroad at prices required by builders, otherwise we could long since have secured a large fleet of up-to-date merchant vessels recently built and now building both in America and Japan, all of which have been secured by neutral countries."

It is not Canadian Railway and Marine World's intention to comment on the ethics of these particular transactions. Similar deals are probably taking place frequently, so we merely accept the information and note the prices quoted as evidence of abnormal times.

The correspondents quoted characterise it as "absolutely disgraceful" that Canada should take contracts to build vessels for neutral countries when it is impossible for British owners to get reasonable deliveries from their home yards. Surely this reason is very illogical. If it is impossible for British owners to obtain deliveries from home yards, and Canadian yards are open to accept contracts, one would think that British owners would flood Canadian yards with orders for new vessels. The Minister of Marine in a recent speech stated that there were plants splendidly equipped for the construction of steel steamships at New Glasgow, N.S.; Montreal, Que.; Kingston, Toronto, Collingwood and Port Arthur, Ont., and Vancouver, B.C., and that orders in council had been passed allowing these plants to build and export to foreign neutral countries, 21 steel steamships of varying tonnage. There is therefore sufficient evidence of the capacity and capabilities of the yards on this side to build vessels of a type especially suitable for ocean service under war conditions. Will British owners in search of new tonnage take advantage of the opportunity of building new tonnage within the Empire? Or will they, as is done in the letter quoted above shelter themselves under the complaint that "surely this is a criminal loss of foresight on the part of our Government, who give no encouragement to British owners to build ships abroad at prices required by the builders." There is no criminal loss, or lack, of foresight in the matter, except possibly on the part of the owners, who have not taken full advantage of the facilities offered. It is not a Government matter, and in the face of the figures quoted, viz., $135 to $145 a ton, the reference to "prices required by the builders" is superfluous.

In answer to a question in the British House of Commons, Nov. 30, it was stated that the British Government would communicate with the Dominion Government on the question as to whether it was in the national interest that the Dominion shipbuilding yards should build ships for neutrals, when it was so difficult for British shipowners to get deliveries.

Floating Dry Dock for Vancouver.—It is reported that arrangements have been completed for building a floating dry dock of double section, 18,000 tons capacity, by Vancouver Dry Docks, Ltd., the incorporation of which was mentioned in our last issue. C. Meek, of Vancouver, is stated to be the chief organizer of the project, and reports state that $2,000,000 of bonds have been sold to Breed, Elliott & Harrison, Cincinnati, Ohio. The scheme covers also the building and operating of a complete shipbuilding and repair plant. Contracts for construction and machinery are reported to have been let, and it is hoped to have the plant in operation within a year. It is the intention to apply to the Dominion Government for aid under the act granting aid for the construction of dry docks.

Dominion Government Steamship Service between Pacific and Atlantic Coasts.

Announcement has been made by the Minister of Customs that the Dominion Government will inaugurate a steamship service between Pacific and Atlantic coast ports in Canada, via the Panama Canal, and that contracts have been authorized for the construction of two steamships, tenders for which will be called for shortly by the Department of Railways and Canals. It has been found impossible to charter suitable vessels for the purpose, and so the decision was reached to have them built, and it is said that they will be built in British Columbia. One of the chief difficulties in connection with such construction appears to be the labor shortage, but it is stated that men will be obtained from Europe, and mostly from shipbuilding yards in Scotland, but owing to the condition of affairs in Great Britain, it is not to be taken as certain that men will be obtained from Scotch yards. The establishment of this service will give an opening for the shipment of grain from Vancouver, where the Dominion Government has erected a large grain elevator. It was also reported recently the C.P.R. was contemplating the erection of a large grain elevator at Vancouver, but it is not likely that this will be done, at any rate, not in the immediate future. It is claimed that manufacturing concerns in Ontario and Quebec will be greatly assisted by the service in having the choice of a rail or water route.

Stranding of the s.s. Hungerford.

At the recent enquiry into the causes of the stranding of the British s.s. Hungerford, off Champlain, in the St. Lawrence River, Nov. 19, 1916, held by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. F. Nash and C. Lapierre, as nautical assessors, judgment was rendered as follows,—The court having carefully considered the evidence, finds that some serious contradictory statements were made with regard to weather conditions, and the wheelsman's evidence in reference to an order given by the pilot, J. M. Labranche, would tend to throw a different light on the pilot's action if the court entertained the evidence seriously. By examination of the engineer's log it is noticed that various orders with respect to speed were given from the bridge, which prevented accurate estimation of distances, and the passing flurries of snow, and the smoke, made the pilot's task more difficult. Yet the court is of opinion that the grounding, which is fortunately of no gravity, could have been prevented had there been a guide for the wheelsman to steer by. The extinguishing of lights in the compass binnacle may facilitate the work of the pilot, providing there are objects visible by which the vessel may be steered, but it is an impossibility to keep a vessel on any given course without some leading objects in view, hence the need of a compass as a guide when fog, mist or smoke overtakes a vessel. In this case, neither pilot nor wheelsman had any knowledge of the direction of the vessel's heading during these snow flurries. In view of the fact that the Champlain lights were seen, also gas buoy 17C, shortly before the stranding, the court cannot overlook the casualty, but the circumstances attending it are such that it will be treated as a minor offence. The court condemns the pilot to pay the cost of the investigation and warns him to be more cautious. The third officer's evidence shows that he reported to the master, R. A. Seabrook, in his room. The court has always maintained that in narrow stretches, and in uncertain or foggy weather, the master should be at his post on the bridge, notwithstanding the presence of the pilot, and he is censured for failing to meet the obligations of his position.

Some suggestions were made to the court with regard to placing a gas buoy where this casualty occurred, and it is said that an application was made last winter with that object in view. The court is not, at this stage, willing to admit the necessity of another buoy, but suggests that the one now in position be shifted to where the spar buoy 15C is at present, as it is a point of the bank advancing towards the channel and more prominent, and being at a turn, the placing of buoy 17C at that spot, or in that locality, would be more effective. Regarding the smoke which the pulp mills emit in the vicinity of Three Rivers, and of which other pilots have complained, the court thinks that, in the interests of navigation, all industries placed on the banks of the St. Lawrence should have their boilers fitted with smoke consumers. There are enough fogs and mists and other elements making navigation hazardous at times, without having to submit to avoidable conditions.

Stranding of the s.s. Haulwen.

An investigation into the cause of the stranding of the British s.s. Haulwen, on Aug. 12, 1916, near Point Citrouille, in the River St. Lawrence, was held recently before Capt. L. A. Demers, Dominion Wreck Commissioner, with Capts. F. Nash and C. Lapierre as nautical assessors. Following is a summary of the judgment,—This case resolves itself into the uncorroborated evidence of the pilot, F. X. Minard, the master and wheelsman on the vessel at the time of the casualty having been replaced, and a new crew, new logs, etc., having been installed on board. The chief officer and chief engineer are the only two members of the crew at the time of the accident. Purely on the evidence of the pilot, the court finds that he committed an error of judgment, due to lack of forethought. It was purely a question of seamanship, with which every pilot is expected to be acquainted, the error of judgment concerning the manoeuvering of the vessel in bringing the vessel to anchor. As the accident happened in August, and on account of the absence of the principal witnesses, the court is inclined to view the matter leniently, and fines the pilot $50 and condemns him to pay the costs of the investigation, and warns him that as this is his second offence, should he appear again, his license will be jeopardized.

Damage by s.s. Twickenham at Sydney, N.S.

The Dominion Wreck Commissioner, Capt. L. A. Demers, assisted by Capts. A. L. Mulcahy and Jas. Hayes, as nautical assessors, enquired recently into the causes of the damage to the Dominion Coat Co.'s chutes at Sydney, N.S., on Oct. 11, and gave the following judgment. No evidence beyond that of the master, R. Craggs, was taken. This was straightforward and to the point, and in acknowledging his failure to assume the responsibility which devolved on him, he simplified the enquiry. The court finds that the master should have issued order to unmoor his vessel, and when once clear from the wharf, handed over the responsibilities of navigating to the the pilot. It must not be lost sight of that the pilot is the adviser of the master as to local conditions, and the master himself is solely responsible for the property committed to his care. Mooring and unmooring a vessel are duties pertaining to seamanship and are not altogether within the scope of a pilot's duty, and hence the court must find the master in default, but in doing so, wishes to emphasize the fact that the action of the master in not foreseeing the effect of hauling the vessel stem first, in the face of a strong wind pressing the vessel against the wharf, is but an error of judgment, and he is therefore cautioned to be more careful in future, and reminded that he is at all times the responsible party.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during November, 1916.

ARTICLES			CANADIAN CANAL	U. S. CANAL	TOTAL
Copper	Eastbound	Short tons		21,281	21,281
Grain		Bushels	6,920,445	8,320,376	15,240,821
Building stone		Short tons			
Flour		Barrels	430,580	1,162,791	1,539,371
Iron ore		Short tons	676,168	5,218,677	5,894,845
Pig iron					
Lumber		M. ft. b.m.	52	36,938	36,990
Wheat		Bushels	9,381,400	19,138,892	28,520,292
General merchandise		Short tons	1,152	37,546	38,698
Passengers		Number	337	27	364
Coal, hard	Westbound	Short tons	6,900	181,170	188,070
Coal, soft			64,016	957,044	1,021,060
Flour		Barrels		60	60
Grain		Bushels		2,550	2,550
Manufactured iron		Short tons	4,722	21,830	26,552
Iron ore		Short tons			
Salt		Barrels	8,400	12,710	21,110
General merchandise		Short tons	44,845	104,568	149,413
Passengers		Number	56	6	62
SUMMARY					
Vessel passages		Number	627	1,920	2,547
Registered tonnage		Net	990,145	5,934,765	6,924,910
Freight—Eastbound		Short tons	1,137,370	6,225,714	7,363,084
—Westbound			121,683	1,266,568	1,388,251
Total freight			7,259,053	10,492,282	17,751,335

Change of Collingwood Shipbuilding Co. Ownership.

H. B. Smith, Owen Sound, Ont.; J. W. Norcross, Montreal; and R. M. Wolvin, Winnipeg, have bought all the assets and undertakings of Collingwood Shipbuilding Co., Ltd. The outstanding capital of the company, which is an Ontario one, is $1,300,000. A new company, with the same name, will be incorporated under Dominion charter, with a capital of $2,600,000. H. B. Smith will be President, and Messrs. Norcross and Wolvin Vice Presidents. The old company's shareholders will receive $1,950,000 of 6% 10 year bonds and $650,000 paid up stock of the new company at the rate of $150 in bonds and $50 in stock for each share of the old company. Included in the purchase is 96% of the outstanding capital of the Kingston Shipbuilding Co., Ltd. J. S. Leitch, Manager, and S. H. Lindsay, Secretary Treasurer, of the old company will receive similar appointments in the new one. The company's stock is firmly held, and there will be no public issue.

The old company owned two dry docks, machine shops and a quantity of land at Collingwood, as well as 96% of the Kingston Shipbuilding Co.'s shares. The directors, according to the last return available, were:—Alex. McDougall, Superior, Wis., President; Thomas Long, Toronto, Vice President; S. H. Lindsay, Secretary-Treasurer; H. B. Smith, S. Dyment, M. P. Byrnes and P. M. Campbell, the last mentioned director having died since. The business was originally established in 1889, under Ontario charter, as Shipbuilding, Dry Dock & Wrecking Co. of Collingwood, Ltd., its name being subsequently changed to the Collingwood Shipbuilding Co., Ltd.

Grounding of s.s. W. B. Morley.

An investigation was held recently into the causes which led to the damage sustained by the s.s. W. B. Morley, whilst in charge of the pilot, G. Perreault, when being swung in the neighborhood of Plum Island, in the St. Lawrence, June 17. Following is a summary of the judgment delivered hy Capt. L. A. Demers, Dominion Wreck Commissioner, and concurred in by Capts. C. Koenig and L. R. Demers, as nautical assessors,—The court had contradictory evidence from each of the four witnesses called with regard to the anchoring of the vessel. The casualty having occurred on June 1, it may be expected that the actual happenings were not memorized, and hence the court concludes, that in the absence of any log books, the evidence, though contradictory in the extreme, is not due to any intention to mislead or mystify the court, but rather to forgetfulness. The pilot's action is the only point for the court to discuss. If it was the intention to anchor when fog came on, the pilot should have stopped the vessel, keeping her in the course and letting go his starboard anchor, and the tide of 1½ miles at that place would have swung the vessel gently either one side or the other, or else have canted the head of the vessel slightly to starboard, which would have answered the purpose and assured the pilot and master that the vessel would swing as desired. Instead of this, the vessel was caused to leave midchannel on a starboard helm, and, after a short interval, to evolute under a hard to port helm, and whilst swinging to the starboard side, her heel struck shoals, injuring the keel and rudder, and then she was allowed to come head to tide before the anchor was let go. From this there is no other conclusion than that the pilot showed lack of judgment in carrying out the evolution. His conduct is not serious enough to cause his license to be dealt with, especially in view of the fact that this is his first trouble in 20 years, but he is condemned to pay the cost of the enquiry, and is cautioned to be more logical and to use better judgment in future. The costs of the investigation are as follows.—Travelling expenses of Wreck Commissioner and stenographer $70, French stenographer $18.75, assessors' fees $20, total $108.75.

The court deprecates the system which prevails on many lake boats. There is a lack of discipline. It is evident that there was no lookout as required by the Board of Trade and the Rules of the Road, that soundings taken and given were incorrect, whether through lack of care or knowledge the court was unable to ascertain, as the second mate, who was detailed to take soundings, has left the vessel, and his evidence was not available, but in view of the conditions existing and the scarcity of labor, the court feels inclined to view the matter leniently. Though the lack of lookout did not contribute to the casualty, it is nevertheless a breach of the regulations. If some discipline had been observed, there would have been no necessity for the master to relieve the man at the wheel so that he might help the second officer to take soundings, unless the casting of the lead was continuous, and lengthy experience has taught the court that two men are not required. Owing to the investigation being delayed so long, due to no particular fault, and causing incomplete evidence, the court only reprimands the master, H. Larosie, for not maintaining better discipline, and cautions him that though a pilot is on board, it is up to the master, and to him only, to observe the Rules of the Road.

Regulations Regarding Vessels' Lights on East Coast.

Vice Admiral C. E. Kingsmill, who signs as Competent Naval Authority, issued the following notice, dated Nov. 24,— "By virtue of the authority conferred upon me by orders in council of Sept. 12, 1914, and Mar. 25, 1915, the following orders regarding ships' lights on the East Coast of Canada are hereby made to come into force forthwith,—

1. Anchor lights—No electrically lit lanterns shall be employed as anchor lights. The normal brilliancy of all other anchor lanterns shall be reduced by 50%.

2. Bow and steaming lights—Vessels are not to use electrically lit lanterns as bow or steaming lights in the vicinity of the harbor.

3. Other lights—No lights, either aloft, on deck or below, except those required by the Regulations for the Prevention of Collisions at Sea, and such as may be necessary for authorized signalling purposes, shall be permitted to be visible from outboard. This shall apply to all vessels whether under way or at anchor.

4. The above orders shall apply to vessels of every description, other than H.M. ships, within the waters of Canada on the East Coast, and extending up the St. Lawrence River as far as the Port of Quebec.

Masters of ships not complying with these orders render themselves liable to a penalty not exceeding $5,000 or imprisonment not exceeding 5 years, or to both fine and imprisonment.

Stranding of the Japanese s.s. Shintsu Maru.

Judgment was delivered recently, at Victoria, B.C., by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, and which was concurred in by Capts. S. W. Bucknam and C. Clarke as assessors, in the matter of the stranding of the Japanese s.s. Shintsu Maru, near Point Roberts in the Gulf of Georgia, Sept. 22. Following is a summary: After studying the evidence. which was fairly satisfactory throughout, the court can come to no other opinion than that the sole blame for the stranding must be imputed to the pilot, H. R. Jones, belonging to the Vancouver Pilotage District, and that no blame can be attached to any members of the crew. In the court's opinion there is no doubt that the night, though dark, was clear, and that there was no fog nor any signs of it at the time, though it was probably misty over Point Roberts. The evidence of the master and crew of the vessel, the log book, as well as the log book of the Fraser River light vessel, clearly substantiate this, as also does the fact that the light of the Sand Heads gas buoy, 4 miles to the north of the stranding, was clearly visible. The court is therefore confident that the accident was due to two causes, the first being that the pilot set the vessel on much too fine a course to be safe, after rounding East point, and the second, that he made no allowance for easterly deviation, due to retained magnetism, which from his long experience he should have suspected to exist, after the vessel had been steering east from Japanese ports for several days. In addition to these two cases there is every probability that the tide, small as it was on that night, had a tendency to set the vessel over toward Roberts Bank.

Owing to the fact that the pilot has already been suspended for three months by the Vancouver Pilotage Authority, for the stranding, the court refrains from dealing with him in any manner, and makes no comment other than that in its opinion, the Vancouver Pilotage Authority dealt with him most leniently, especially in view of the fact that this is the second serious accident to large ocean going vessels under his charge within three months. The Court regrets that the pilot took up the somewhat defiant attitude he did in refusing to appear and give evidence, until forced to do so, thus causing not only considerable delay and inconvenience, but also unnecessary expense. The court being of opinion that public money is certainly not for the purpose of being needlessly wasted, more especially at the present time, therefore orders under Sec. 794, part 10, cap. 113 of the Canada Shipping Act, that the pilot pay all costs for the two extra and unnecessary days which the court was forced to sit, such costs being $70. This will not only be a lesson to him, but a deterrent to others who might in future cases feel inclined to take up a similar attitude. The court wished to place on record the appreciation of the courtesy, characteristic of their nation, shown by the Japanese master, officers and crew of the s.s. Shintsu Maru, in coming over voluntarily from a U. S. port, knowing that they could not be compelled to, to give evidence when requested to do so, and also to convey its thanks to the British Consul at Seattle, Wash., and to Frank Waterhouse & Co., agents for the vessel, for the interest they took and the help they gave in the matter.

Atlantic and Pacific Ocean Marine.

It was announced from London, Eng., in the early part of December, that war risk insurance in London had been advanced from 5% to 10% for trans-Atlantic and Cape of Good Hope trade, on the report that a German commerce raider was at large in the Atlantic Ocean.

The steamships Blaamyra and Thorjerd, which were mentioned in our last issue as having left Port Arthur, where they were built, for the Atlantic Coast, are owned by Hans Hensen, Christiania, Norway, and will be operated between North and South America in the general trade until the end of the war.

Cable reports from London, Eng.,. Dec. 15, state that rumors were current on the Stock Exchange to the effect that the Cunard Steamship Co. was taking over the C.P.R. Atlantic steamships, and that the C.P.R. was taking over the Union Steamship Co. of British Columbia, thus confining its steamship service to the Pacific. In referring to this report, G. M. Bosworth, Vice President, C.P.R., is reported to have stated that it was entirely unfounded.

The Marine Navigation Co. is operating the steamships Nigaristan and North Cambria between Halifax, N.S., and France, and also controls a number of sailing vessels, 8 in all, 3 of which have auxiliary power. These latter are engaged in the lumber trade. The s.s. Cardiff is to be added for the Canada-France service when she is released by the British Government. The company is reported to have under construction in England 2 steamships to be named William Wallace and Robert Bruce, respectively 7,500 tons and 8,400 tons, and one steamship the Dominion, under construction in Holland, for U.S. trade.

A steamship is under construction at the Wallace Ship Yards, North Vancouver, for the Kishimoto Kissen Kabuskiks Kaisha, of Japan, for service on the Pacific Ocean. The vessel will be a steel cargo steamship, with capacity for 4,500 tons dead weight, driven by single screw, and built to Lloyd's A1. classification, under special survey. She will be built with a straight stern, with 2 masts, machinery placed amidships, and will be of the bridge deck type. The propelling machinery will consist of triple expansion en—gine, with cylinders, 24, 38 and 62 in. diam. by 42 in. stroke, supplied with steam by 2 single end Scotch boilers, 14¾ by 10¾ ft., at 160 lbs., and fitted with tubes giving 4,268 sq. ft. of heating surface.

Tide Tables for the Eastern and the Pacific Coasts for 1917 have been issued by the Naval Service Department's Tidal and Current Survey. These are issued free on application to the department.

Welland Ship Canal Construction.—With the close of the construction season for the winter, work has been suspended on the Welland Ship Canal, with the exception of a few small matters which will be cleared up very early in January. It is not the Government's intention to proceed further with the work until the close of the war. This decision has been reached owing to the shortage of labor and the difficulties experienced in obtaining adequate supplies as required. The work done on the four contracts under way is of such a nature that it will not deteriorate in the interval, and after the war the remaining contracts will be awarded and the whole pushed through with all speed.

Maritime Provinces and Newfoundland.

Pickford & Black have been appointed Lloyd's agents at Halifax, N.S. They have been acting in that capacity since the resignation of the position by S. Cunard &Co.

A fire in the Marine Navigation Co.'s office in the Pickford & Black Building, Halifax, N.S., Dec. 3, did considerable damage to the property and to the workshop and store where Pickford & Black conducted their stevedoring business.

A steamship is reported to be under construction at Wedgeport, Yarmouth, N.S., by Capt. H. T. Leblanc for freight service. It is stated that she will be launched in the spring, and that she is being built on the same lines as those used on the Great Lakes, with machinery aft and a clear cargo space amidships.

The Boston & Yarmouth Steamship Co., which is operated in connection with the Dominion Atlantic Ry., placed an additional vessel in service between Yarmouth and Boston, Dec. 15. The steamships Prince Arthur and Boston are now giving the service, the latter vessel making an additional two trips a week in the freight service only.

The Dominion Government is offering for sale, its s.s. Ostrea, which has been attached to the Department of Naval Service for some time, in connection with oyster culture. She is being replaced by another vessel, bearing the same name, which was described and illustrated in our last issue. The purchaser of the old vessel will be required to change her name.

A channel 200 ft. wide has been dredged from deep water to 175 ft. inside the lighthouse on the Government pier at Digby, N.S. The depth of the channel is generally 20 ft. or more, but there is a spot outside the lighthouse which is only 16 ft. From 1,800 ft. north of the lighthouse a channel 120 ft. wide has been dredged for 700 ft. towards Sproule's wharf, and inside this channel a cut 20 ft. wide has been made approximately to low water mark for a further 780 ft.

The s.s. Hampstead, which operates during the summer between St. John and Fredericton, N.B., was destroyed by fire at St. John, where she was berthed for the winter, Dec. 9. It is stated that some person boarded the vessel and started a fire in one of the stoves. She was built at Hampton, N.B., in 1893, and was screw driven by engine of 20 n.h.p. Her dimensions were, length 94 ft., breadth 17.7 ft., depth 7 ft.; tonnage, 235 gross, 159 register.

Reference was made in our last issue to New York reports to the effect that the Canada Atlantic & Plant Steamship Co. intended to discontinue business and to sell its steamships Evangeline and Halifax. We are advised that such statements are premature. The service between Charlottetown and Hawkesbury is always withdrawn during the winter, and the service between Halifax and Boston is altogether dependent on freight conditions. It is not likely that the vessels will be running during January. Neither of the two vessels has been sold.

The Dominion Government s.s. Grilse, which was purchased in the U.S. for the Government by J. K. L. Ross, and was reported to have sunk at sea with all hands, Dec. 13, landed at Shelburne, N.S., Dec. 14, in a damaged condition, due to excessively bad weather, and reported the loss of 6 of her crew. She was built in Scotland on the lines of a torpedo boat destroyer ,and after purchase by the Government was fitted with torpedo tubes and utilized in war service on the Atlantic Coast. She sailed from Halifax Dec. 11 for Bermuda, and reported on Dec. 12 by wireless that she was returning to Shelburne for shelter. Later a wireless message was received that she was in a sinking condition and required immediate assistance. Nothing more was heard of her until she arrived in port.

The Bathurst Lumber Co. had under consideration recently a proposal to start a shipbuilding yard at Bathurst, N.B., and A. McLean, the General Manager, is reported to have made a statement that there is at present an acute scarcity of labor, and any new venture would necessarily be handicapped on this account. Apart from this, such a business would require careful nursing for some time, and his company could not undertake to go into the business except under some system of Government subsidy. This, he believed, would occupy the Government's attention in the course of the next session, and if such a system of subsidies was started, the company would immediately start shipbuilding. They would undertake the construction of sailing vessels of from 500 to 1,000 tons, equipped with auxiliary power.

Ontario and the Great Lakes.

The Sault Ste. Marie canals and locks were closed Dec. 21, for the winter.

The Kingston Shipping Co., Ltd., Kingston, Ont., has surrendered its charter, which has been cancelled.

The Western Dry Dock & Shipbuilding Co., Port Arthur, is reported to have closed contracts for the construction of 8 steel steamships, 6 for ocean service, and 2 for the Great Lakes.

Mention was made in our last issue of the sale of the motor ship Fordonian and the s.s. Algonquin to United States interests, and it is now stated that they were sold to the American Star Steamship Corporation, New York.

The master of the U. S. s.s. Morrill has reported the discovery of a wreck with one mast, 6 ft. above water, about 9 miles from the southeast shoal lightship in Lake Erie. It is supposed to be the wreck of the s.s. Marshall Butters, lost Oct. 20. The least depth over the hull is 6¼ fathoms.

During the past navigation season, 226 vessels with grain arrived at Port McNicoll, and 106 trips were made by C.P.R. vessels with passengers and freight. The elevator there handled nearly 44,000,000 bush. of grain, and 282,433 tons of flour and feed eastbound, and 69,100 tons of package westward, passed through the sheds.

A retrial of an action for damages against the Lake Simcoe Navigation Co. by J. C. Freelan, a bridge tender on the Trent Valley Canal, for injuries sustained when the s.s. Otonabee struck a bridge, took place at Whitby, Dec. 15, and the claimant was awarded $1,800 and costs. In the first trial he was awarded $2,000, and an appeal by the company resulted in an order for retrial.

The United States Lake Survey reports the levels of the Great Lakes in feet above mean sea level for November, as follows.—Superior, 603.50; Michigan and Huron, 580.64; Erie, 571.70, and Ontario, 245.65. As compared with the average November levels of the past ten years, Superior was 1.07 ft. above; Michigan and

Huron, 0.49 ft. above; Erie, 0.06 ft. below, and Ontario, 0.13 ft. above.

Canada Steamship Lines' s.s. Wahcondah, which has ben engaged in ocean service latterly, has been sold to a British firm for £46,000. She was built at Port Glasgow, Scotland, in 1903, and is of steel, with 4 watertight bulkheads, with triple expansion engines with cylinders 12, 28 and 47 in. diam. by 33 in. stroke, 750 i.h.p. Her dimensions are,—Length 230 ft. 4 in., breadth, 37 ft. 1 in., depth 24 ft.; tonnage, 1,554 gross; 990 register.

Navigation on the Great Lakes closed, officially, Dec. 1, when ordinary marine insurance expired, but as customary, certain insurance was extended for 12 days, and general navigation was suspended Dec. 12, for the winter. Several vessels continued operations beyond that date. The losses for the year were comparatively small, and the underwriters are reported to have had a profitable season.

The demand for ocean tonnage amongst Great Lakes shipping is reported from Cleveland, Ohio, to be continuing strong. Further orders have been placed there recently for new tonnage of Welland Canal size for ocean service, for delivery in the early autumn. It is stated that builders will be unable to take all the orders offering, owing to the uncertainty of obtaining materials in reasonable time. It is also stated that a number of lake vessels have been sold and are being taken to the Atlantic Coast.

J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd., who returned recently from Great Britain, is reported to have stated that negotiations had been completed for the chartering of 15 steamships for ocean service for 1917. During the past year, 18 of the companey's steamships were engaged in this trade under charter, and it is expected that eventually the number of vessels so engaged for 1917 will be the same. The rates obtained are considerably higher than those paid in 1916.

The Board of Grain Commissioners has issued a statement showing that during the past year a record was created in the shipping of grain cargoes for Port Arthur and Fort William, both in number and quantity. In 195 Canadian, and 565 U. S. vessels, 253,969,599 bush. of all kinds of grain were carried east. This was an increase of 341 cargoes and 52,200,000 bush. over 1915, and was more than double the amount shipped in 1914. In 1914, U. S. vessels carried only one-third of the grain shipped from the head of the lakes, but in 1916, Canadian vessels carried only 13,000,000 bush. more than U.S. vessels.

Reports are current in Montreal that Canada Steamship Lines Ltd. has secured control of the Montreal Coal and Dock Co., that it may in the near future get control of the Montreal Transportation Co., and that it is negotiating for the control of an important Ontario shipping company. Canada Steamship Lines' officials are reported to have stated that while the Montreal Coal and Dock Co.'s property has been secured, there is no ground for the report regarding the Montreal Transportation Co. So far as the Ontario shipping concern is concerned we may say that negotiations were in progress some time ago for acquiring a very successful shipping company, but the matter was dropped for a time.

The Timiskaming Navigation Co.'s property, including four steamboats, the Jubilee, Meteor, Silverland and Temiskaming, and wharf and dock accommodation at Haileybury, was reported recently to have been sold to P. Gibbons, but we are officially advised that no sale has as yet been concluded. An order for the winding up of the company was made in Toronto, Sept. 25, 1914, and Jas. Hardy, Toronto, was appointed liquidator. Since then the porperty has been operated by P. Gibbons, under lease from the liquidator. Several propositions are under consideration, but at the time of writing, no offer for taking over the property has been accepted.

Lt. Col. W. P. Anderson, Chief Engineer, Marine Department, was at Midland, Dec. 14 and 15, for the purpose of noting ice conditions there, and if necessary organizing a service to keep the harbor clear so as to enable all vessels still out to enter. On arrival he found that practically all the vessels were already in port. The bay was covered with solid ice from 2 to 3 in. thick, but as the Dominion Government s.s. Simcoe had just gone out and the tug Pratt had crossed from Midland to Port McNicoll a couple of times, vessels were experiencing no difficulty in making port. Some moving of the vessels was necessary to enable them to come in succession under the elevator legs for discharging, but this was work to be done by the vessel owners.

The Sault Shipping Co., Ltd, has purchased the s.s. Valcartier from Lake Commerce, Ltd., Toronto, and it is announced that on the reopening of navigation it will be operated under the management of the Algoma Steel Corporation, Sault Ste. Marie, Ont. The s.s. Valcartier, formerly William Henry Mack, was built under special survey at Cleveland, Ohio, in 1903, and is constructed on the channel system, with steel tank top, three watertight and two non-watertight bulkheads, steel boiler house, steam pump wells, and complete electric installation. The hold is divided into 4 compartments, with hatches spaced 24 ft. centres. She is equipped with triple expansion engines, 20, 33½ and 55 in. diam., by 40 in. stroke, 1,170 i.h.p. at 85 r.p.m, and is supplied with steam from 2 Scotch boilers 12 ft. 10½ ins. by 13 ft. at 175 lbs. Her dimensions are,—length 354 ft., breadth 48 ft., depth 28 ft.; tonnage, 3,748 gross, 2,250 register.

Obstruction in Lake Superior.—The United States Lake Survey is in receipt of a report made by Capt. Samuel Hill, of the St. Lawrence & Chicago Steam Navigation Co.'s s.s. J. H. G. Hagarty, concerning an obstruction encountered by his vessel in Lake Superior on the evening of Nov. 4. The vessel, bound down from Fort William, had proceeded about 38 miles on a course 121° (SE. x E. ¼ E.—true) taken from a point 1 mile south of Passage Island, when she came in contact with some obscure obstacle, breaking off three flanges of her wheel, no other part of the vessel appearing to have been hit. As there was no metallic sound attending the striking, it is assumed that the obstruction was of wooden formation. The damage sustained by the vessel indicates that the obstacle, if still in the locality reported, is a dangerous menace on the direct course from Passage Island to Whitefish Point, and mariners are cautioned accordingly.

The Turn of Tidal Streams in Relation to the Time of the Tide is the title of a paper read by W. Bell Dawson, Superintendent, Tidal and Current Survey, before the Royal Society of Canada in May, 1916, and an abstract of which has been issued in booklet form.

Manitoba, Saskatchewan and Alberta.

Plans have been filed with the Public Works Department at Ottawa, and at Winnipeg, by Brown & Rutherford, Winnipeg, for the construction of a wharf or dock on the Red River at Winnipeg. The site covers lots 25 and 26 in St. John Parish, from the intersection of the northerly limit of Sutherland Ave. with the easterly limit of Buchanan St., 597.5 ft. to the northwesterly limit of the proposed dock lines, and thence easterly for 315 ft. and southerly along the north limit of Higgins Ave. to 50 ft. from the northwestern limit of land taken for the right of way of the Manitoba Southwestern Colonization Ry., and thence southwesterly to the southwestern limit of Sutherland Ave.

British Columbia and Pacific Coast.

Yarrows, Ltd., Victoria, B.C. are reported to have received an order for a stern wheel, shallow draught steamboat, similar to the one built there recently, for operation in Indian waters.

The Canadian Robert Dollar Co., Ltd., has acquired about 40 acres on the north shore of Burrard Inlet, where, it is reported, a sawmill and docks are to be erected.

The Canada West Coast Navigation Co.'s auxiliary vessels Geraldine Wolvin and Mabel Brown, will, as soon as they are out of the builders' hands, be chartered to the Canadian Trading Co., for loading lumber in March or April, at Vancouver, for Sydney, Australia, at 120 shillings, and for Melbourne, Australia, at 130 shillings.

The Dominion Government s.s. Quadra, which was used until recently as a lighthouse tender on the Pacific Coast, has been sold to the Howe Sound Mining Co., and will be utilized for carrying ore to the company's smelter at Tacoma, Wash. The Quadra was sunk in Nanaimo harbor, Feb. 26, 1916, in collision with the C.P.R. s.s. Charmer, and was raised and practically rebuilt to suit the ore trade.

A steamship company is being organized in Prince Rupert to operate vessels in the Southeastern Alaska trade. It is stated that the company will work as an independent concern, but will handle freight to and from the Grand Trunk Pacifis Ry., and is reported to have made contracts for the carriage of a large quantity of fish from the canneries, and to have arranged for the chartering of one vessel.

The White Pass & Yukon Ry. is reported to be building 2 stern wheel steamships for service on Taku Arm and the Atlin Lake to replace the steamships Gleaner and Scotia. The two latter vessels have been run ever since the company has operated between Carcross and Golden Gate, and the growth of the tourist traffic has made the improvement of the boat service a necessity. The company is also reported to be considering the building of 2 additional steamships, at an approximate cost of $200,00, for the tourist business between Whitehorse and Atlin.

It was anticipated that the breakwater at Victoria would be practically completed by the end of December. The work at Ogden Point was commenced in 1913. The breakwater consists of three arms, the first running out from the shore being 550 ft. long, the middle or main arm being 1,500 ft. and the extreme arm, 700 ft.

About 550 ft. of the parapet is still to be finished, but it is expected that this will be done early in January. The contractors are Sir John Jackson (Canada) Ltd. Work is progressing on the Government piers. All the crib caissons have been sunk, with the exception of one, which is built and awaiting a favorable opportunity for placing it. The concrete superstructure is practically completed on one side of the pier next the breakwater, and it is estimated that about 30% of the whole work is done. The contractors are Grant, Smith and McDonnell Ltd.

The master of the s.s. Cheakamus has reported to the Marine Department the existence of an uncharted shoal in the west end of Cordero channel, between Lyall Island and Grismond Point. The shoal extends about one cable in a 48 deg. direction from Lyall Island, and the depth on the shoal varies from 8 to 20 ft. The formation is rocky and it is marked by kelp in the summer. There is a good channel with 10 fathoms and no bottom on the mainland side of mid-channel.

With reference to a report that the Amalgamated Engineering & Dry Dock Co. had negotiated a loan in the U.S. which would enable it to carry out its schemes for the construction of a dry dock and shipbuilding plant on the north shore of Burrard Inlet, Vancouver, H. Stevens, M.P., is reported to have stated that he was not surprised to learn that such a loan had been effected, but he was doubtful with the increased cost of materials whether the plans and the contract could be proceeded with without some revision. Press reports stated that C. J. V. Spratt, of Victoria, holds a Dominion subsidy of a 4½% interest gurantee on an investment of $5,500,000. We are officially advised that no subsidy agreement has as yet been entered in to with the Amalgamated Engineering & Dry Dock Co. for the construction of a dry dock and shipbuilding plant at North Vancouver.

Loss of Steam Tug Chambly.—The Wreck Commissioner, Capt. L. A. Demers, assisted by Capts. C. Lapierre and Faubert, enquired into the causes of the sinking of the Marine Department's steam tug Chambly, at Cap a la Roche in the St. Lawrence River, on Oct. 4, and found that there was no negligence or carelessness, but that the cause of the disaster was bad judgment, and held the master, Capt. Robideau and the second master, Capt. Laroche, jointly responsible, and condemned them to each pay half the cost of the investigation, a total of $95.97. One of the assessors, Capt. Faubert, dissented from the judgment, and considered that no blame could be attached to the crew, as owing to the swiftness of the current they could not foresee the result.

Shipbuilding in the United States.—Figures issued by the U. S. Commerce Department show that the shipbuilding industry in that country is reaching proportions comparable with those of the industry in the British Isles. On Sept. 30 last, there were ordered and under construction in U. S. shipyards 417 steel vessels, aggregating 1,454,000 gross tons. There were at the same time under construction in the United Kingdom 469 vessels of the same class, aggregating 1,789,000 gross tons.

Clara Shipping Co., Ltd., has been incorporated under the Nova Scotia Companies Act, with $45,000 capital, to own and operate schooners and ships and carry on a general carrying business.

Mainly About Marine People.

H. H. Drake has been appointed shipping master for the port of Halifax, N.S.

Mr. Justice F. E. Hodgins, of the Appellate Division of the Supreme Court of Canada, and latterly acting Deputy Judge in Admiralty, has been appointed Local Judge for the Toronto Admiralty District of the Exchequer Court.

Major B. R. Hepburn, M.P., formerly of the Ontario & Quebec Navigation Co., Picton, Ont., has been appointed temporary Lieutenant Colonel, while engaged as Assistant Director of Timber Operations in Great Britain.

Mrs. Katherine F. Foote, who died at Fergus, Ont., Dec. 6, aged 101 years, 6 months and 14 days, was mother of **Capt. R. D. Foote**, master of the Northern Navigation Co.'s s.s. Noronic, and Commodore of the fleet. **Capt. J. B. Foote**, of the Toronto Vessel Insurance Agency, and **A. Foote**, who has been superintending dredging operations in connection with the Welland Canal, are grandsons.

T. A. Sparks, of the firm of Funch, Edye & Co., New York, has been appointed General Agent Cunard Steamship Co., for the United States, at New York, vice C. P. Sumner resigned. In addition to U. S. territory, he has jurisdiction over any business that may be done in Canada via New York or Boston. We are advised that the business of Funch, Edye & Co. is being taken over by the Cunard Steamship Co., The Robert W. Reford Co., Montreal and Toronto, are the General Agents for Canada, of the Cunard Line, on appointment from Liverpool, Eng.

Steel Steamships for Norway.—Mention was made in our last issue that seven vessels had been ordered in Vancouver for Norwegian interests, and that the builders had been granted permission by the Dominion Government to build them for export for foreign registry. Three of them are being built by J. Coughlan and Sons, and 4 by Wallace Shipyards, Ltd. They will all be of approximately the same type. The three first mentioned will be 8,800 tons dead weight capacity, length 423 ft., beam 54 ft., moulded depth 29¾ ft. They will be engined for a speed of about 10½ knots when fully loaded. Delivery is to be made during the next 12 to 15 months.

The Long Sault Development Co.'s Project for the construction of a dam across the St. Lawrence in connection with its power development scheme, has been finally quashed, the U. S. Supreme Court having dismissed the company's appeal against the ruling of the New York courts annulling its franchise. This matter has been before the courts for several years, and has been persistently fought at every stage by the Dominion Marine Association and the Shipping Federation of Canada, on the ground that it would interfere considerably with the safe navigation of the St. Lawrence River.

Rumored Control of British Shipping.—Reports from London, Eng., indicate that with the change in the British Government, a policy will be adopted whereby all British shipping will be brought under the Government's direct control in a somewhat similar manner to that adopted with the railways there in the early stages of the war.

The Provincial Steamship Co., Ltd, has been incorporated under the Nova Scotia Companies Act, with $20,000 capital, to own and operate steam and other vessels, and to assist wrecked and stranded vessels.

The Storstad-Huftero-Jason Collision.

The Dominion Wreck Commissioner delivered judgment recently in the matter of the collision between the steamships Storstad, Huftero and Jason, which is summarized as follows:—The court, having carefully weighed the evidence which was contradictory on many points, finds that the master of the Storstad, Capt. Anderson, gave the proper signals up to the time of the collision appearing imminent, then his duty, according to articles 27 and 29, was to reverse his engine and sound three blasts, that is when both vessels were two or three ships lengths from each other, which he failed to do. With respect to the Huftero collision that is the only point in which he failed; but regarding the damage to the Jason the court holds that he is responsible, as the order full speed ahead after a full speed astern order was unwarrantable. The court wishes to point out that there was an improper and indifferent lookout kept on this vessel, though it did not contribute to either collision. The court finds that the master of the Huftero, Peter Dessingtion, wilfully by his actions brought about this collision between his vessel and the Storstad and force the latter into such a position that the court must also find him partly responsible for the collision between the Storstad and the Jason. The court finds him in default for having an improper lookout and for deliberately violating articles 19, 22, 23, 25 and 29 of the Rules of the Road. With respect to the pilot of the Huftero the court has determined that after he counselled the master to port and his timely suggestions were rejected, he acted wisely in relinquishing his responsibilities as pilot, and leaving the master to act for himself and therefore the court exonerates the pilot from all blame.

Telegraph, Telephone and Cable Matters.

The C.P.R. telegraph offices in Lethbridge, Alta., have been moved to 5th St. South, the new building there having been completed early in December.

J. McMillan, Manager of Telegraphs, C.P.R., returned to Montreal, Dec. 8, after completing the usual periodical trip of inspection over the lines through the west.

The Great North Western Telegraph Co., has opened offices at Paisley and St. David's, Ont., and Forestburg and Meeting Creek, Alta., and has closed its offices at Beaumarie and Muskoka Wharf, Ont., and Greenbush, Sask.

The rGeat North Western Telegraph Co. at Christmas gave all employes who had been in the service for not less than a year, bonuses as follows: Those receiving less than $1,200 a year, 7% of the annual wage, and those receiving between $1,200 and $2,000 per annum, 6% of the annual wage.

E. Cameron, agent, Great North Western Telegraph Co., Brantford, Ont., has been retired, after 61 years in telegraph service. He was born in Scotland in 1841, and came to London, Ont., in 1849. He commenced his telegraph service in 1855 with the Montreal Telegraph Co. as a messenger, and later was an operator at London, Ont. He had been in charge of the Brantgord office since 1868.

The Board of Railway Commissioners has dismissed the application of the City of Chatham, Ont., for the removal of tele-

graph and telephone poles and wires from the streets, by the C.P.R., the Great North Western Telegraph Co., and the Bell Telephone Co. The application also asked that if the G.N.W.T.Co. desired to maintain its wires on King and William Sts., that they be placed in underground conduits, and the poles on the streets removed within 6 months, and that it remove its poles on Queen and Fourth Sts., which also carry Bell Telephone Co.'s wires.

Norman W. Bethune, who died at Ottawa, Ont., Dec. 7, aged 88, was a nephew of the late Commodore Kitson, of St. Paul, Minn., well known as a steamboat owner and railway builder in the early days of railway construction in the Canadian Northwest. He commenced to learn telegraphy in 1847, and was one of the first Morse operators in America. He was for a time in the Montreal Telegraph Co.'s service, and occupied the position of manager. He had lived in Ottawa since 1866, and was manager of the Great North Western Telegraph Co. office there for some years, until his retirement a few years ago.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Pratt & Letchworth Co., Ltd., Brantford, Ont. D. P. Lamoreux has been appointed General Manager.

W. F. Angus, Vice President and Managing Director, Canadian Steel Foundries, Ltd., Montreal, has resigned to become a Vice President of the Dominion Bridge Co., Ltd., of which he has been a director for some time. He remains as a director of Canadian Car & Foundry Co., Ltd., and Canadian Steel Foundries, Ltd.

The Canadian Fairbanks Morse Co., Ltd., has appointed F. W. Evans Manager of its Toronto House, 26 Front St. West. He has had a number of years experience with the company, particularly in its machine tool department, and has been acting Manager in Toronto for the past year.

Right of Way for the Union Jack.—The rules and regulations governing the port of Halifax, N.S., have been amended by adding the following,—When any of His Majesty's ships, whether British or Canadian, or other vessels in charge of His Majesty's officers, about to pass in or out of the harbor, hoists the Union Jack at the foremast head, all other of H. M. ships, whether British or Canadian, present in port shall hoist the pilot jack as a general warning, and the pilot jack will also be hoisted on the flagstaff at the dockyard for the same purpose, and all other vessels of every description under way in the harbor shall keep out of the way of the vessel flying the Union Jack, provided always that the said vessel shall be navigated with due care and at moderate speed, and that she shall be, so far as practicable, kept on the side of the fairway which lies on her starboard side.

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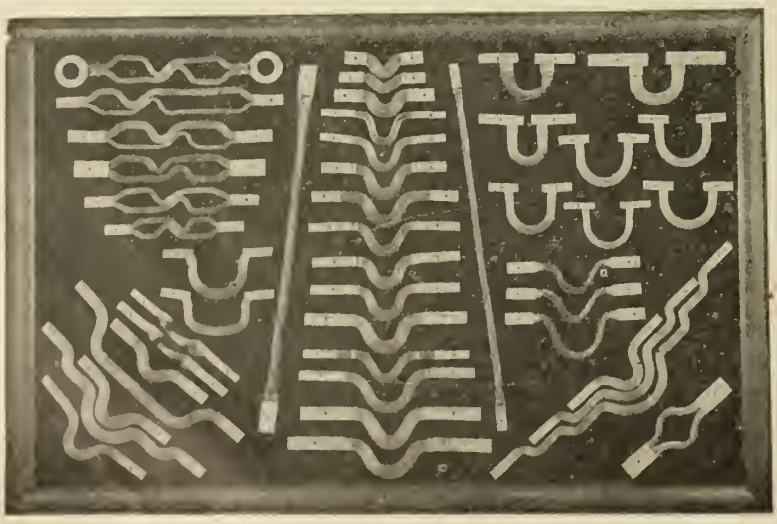

Electric Weld Rail Bonds

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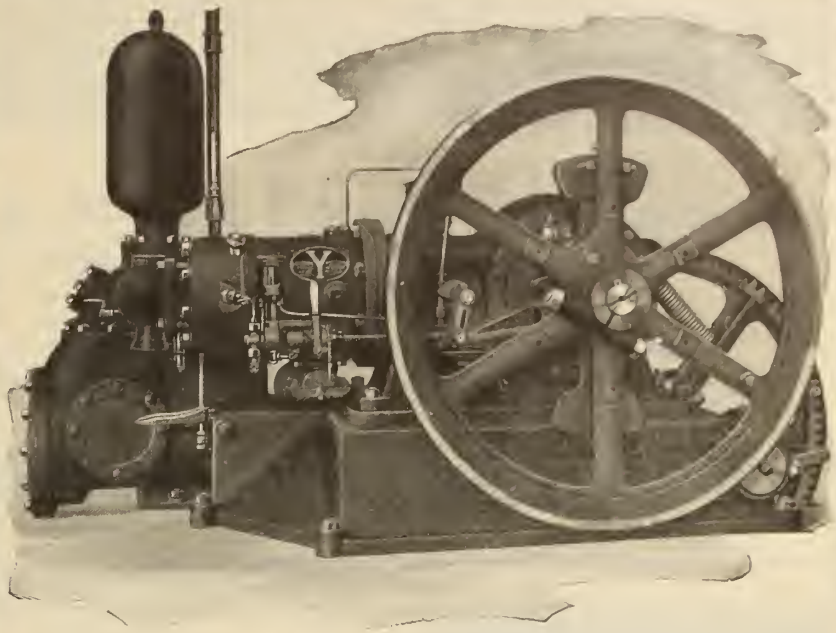
Cleveland, Ohio

Transportation Conventions in 1917.

January.—American Association of Demurrage Officers, New York, N.Y.
Jan. 16.—Railway Business Association, New York, N.Y.
Jan. 23-25.—American Wood Preservers Association, New York, N.Y.
Mar. 20-22.—American Railway Engineering Association, Chicago, Ill.
May.—Association of Railway Claim Agents, Louisville, Ky.
May 9-11.—Railway Development Association, Louisville, Ky.
May 14-17.—International Railway Fuel Association, Chicago, Ill.
May 30.—Association of American Railway Accounting Officers, Richmond, Va.
June.—American Association of Freight Agents, Denver, Col.
June.—American Railway Master Mechanics Association.
June.—Master Car Builders Association.
June 19.—Freight Claims Association, Banff, Alta.
August.—International Railroad Master Blacksmith's Association, Chicago, Ill.
September.—Railway Signal Association, Atlantic City, N.J.
Sept. 11.—Master Car and Locomotive Painters Association of the United States and Canada, Chicago, Ill.
Sept. 18-20.—Association of Railway Telegraph Superintendents, Washington, D.C.
Sept. 18-21.—Roadmasters and Maintenance of Way Association, Chicago, Ill.
October.—American Association of Dining Car Superintendents, San Francisco, Cal.
October.—Railway Real Estate Association, Duluth, Minn.
Oct. 16-18.—American Railway Bridge and Building Association, St. Paul, Minn.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:
Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.
Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.
Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.
Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.
Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.
Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
Dominion Marine Association—F. King, Counsel, Kingston, Ont.
Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.
Express Traffic Association of Canada—C. N. Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.
Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.
International Water Lines Passenger Association—M. R. Nelson, New York.
Niagara Frontier Summer Rate Committee—James Morrison, Montreal.
Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.
Quebec Transportation Club—A. F. Dion, Quebec.
Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.
Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.
Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.
Transportation Club of Vancouver—H. W. Schofield, 553 Granville Street, Vancouver, B.C.
Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.
Western Canada Railway Club—Louis Kon, Bo 1707, Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.
Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.



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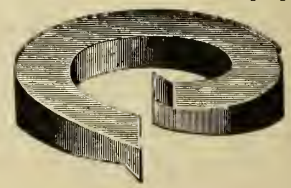

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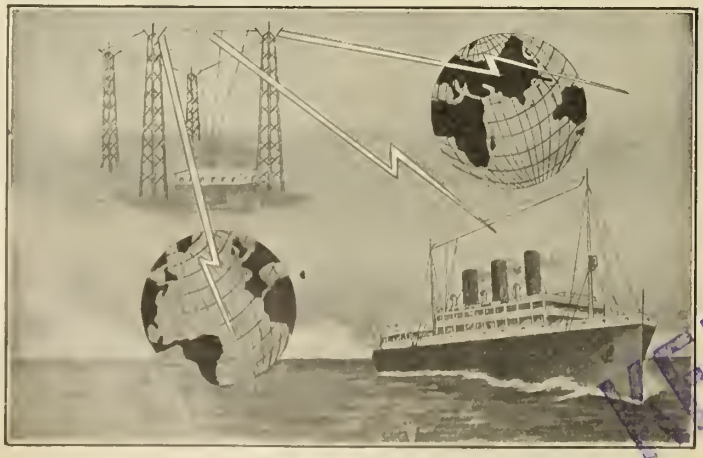

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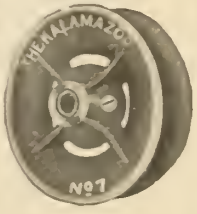

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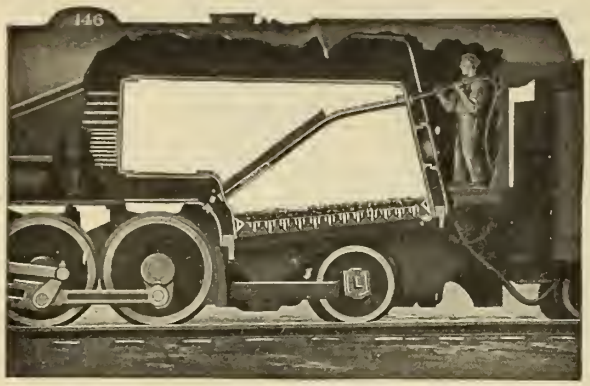
Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of Locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

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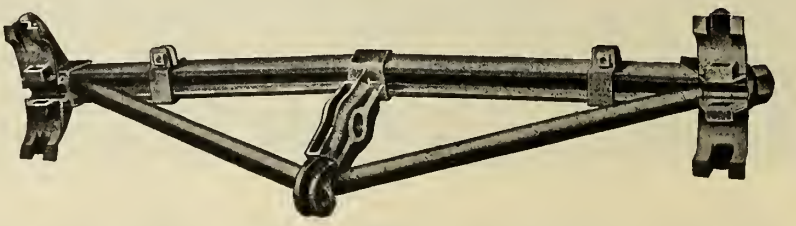

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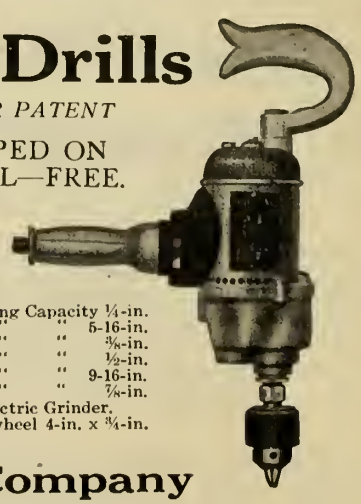

000	Drilling Capacity	¼-in.
00	" "	5-16-in.
0	" "	⅜-in.
01	" "	½-in.
1	" "	9-16-in.
2	" "	⅝-in.

No. 6 Electric Grinder, wheel 4-in. x ¾-in.

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CHRISTMAS MESSAGE

The Hospital for Sick Children

COLLEGE ST., TORONTO.

Dear Mr. Editor:—

Thanks for the privilege of appealing through your columns on behalf of the Hospital for Sick Children, the great Provincial Charity.

Our need of money is measured by the children's need of help, and you can judge how great that need must be when last year 3,045 sick little ones were treated as in-patients, and as will be seen from the 1916 figures, 592 patients were admitted from 242 places outside Toronto.

Last year 271 in-patients were treated for deformities, such as club feet, bow-legs, knock-knees, Pott's disease of the spine, lateral curvature of the spine, dislocations, infantile paralysis, tubercular disease of knee, hip, ankle.

Is the Hospital for Sick Children to take dollars out of your pocket, or is death to take babies out of their cradles? That is the question.

One gift more in the Hospital's treasury means one coffin less in the LITTLE WHITE HEARSE.

The Hospital must be digging up help for little children from the soil of human kindness, or sextons will be digging graves for little children in the soil of many a cemetery.

The Hospital for Sick Children can only volunteer its mercy in so far as you friends of little children volunteer your money for service in the Hospital's never-ending battle for the lives of the little ones.

Let your money fight in the trenches of some mother's trouble and rescue some little child from the dugout of pain, disease and death.

Can the Hospital leave children to die because the fathers of those children have left home to fight for liberty on the British battle line, and can the Hospital help the children of Canada's soldiers with its care unless you help the Hospital with your cash?

You have money enough to help every other war fund without keeping back a dollar from the Hospital's war fund—the fund that helps the Hospital save the lives of little children, including the soldiers' little children.

Do not let the little children pay, in the loss of the Hospital's care, the contribution that should be given and must be given to the war funds.

Your money can send a message of cheer to some father in the trenches—yes, send that message from the cot where the Hospital nurses some little child back to life, the child of the father who is fighting your battle in the trenches.

Every dollar kept from the Hospital's power to serve the little children is a weight added to the burdens and a grief added to the sorrows of this war.

You can bear to have your pocket emptied of a little money easier than some mother can bear to have her home emptied of a little child.

Will you send a dollar, or more if you can, to Douglas Davidson, Secretary-Treasurer, or

J. ROSS ROBERTSON,
Chairman of the Board of Trustees

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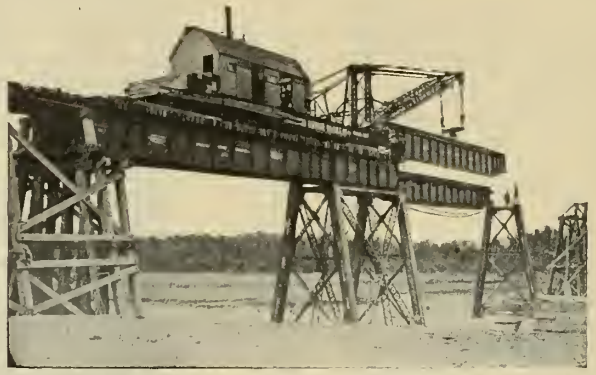

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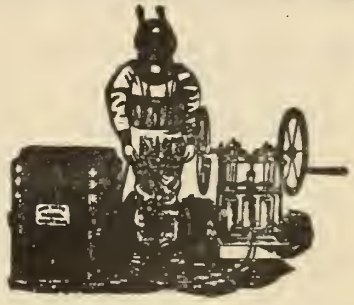

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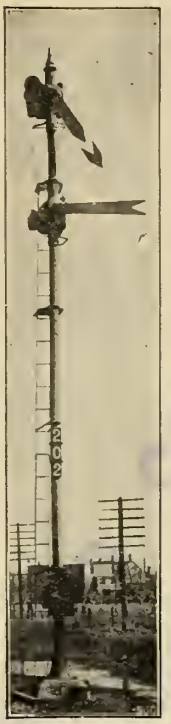

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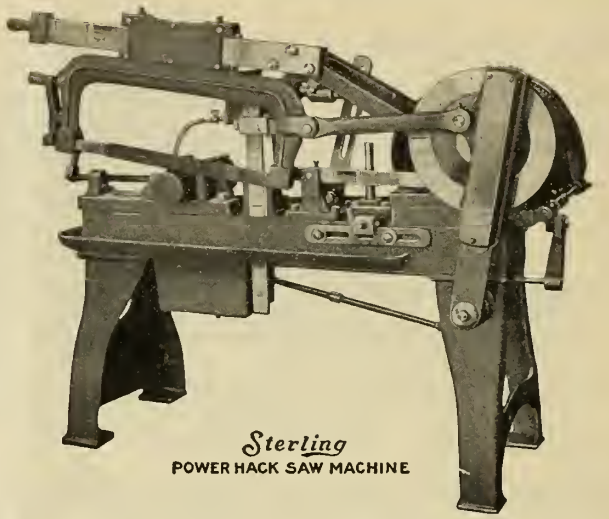

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The Reinforced Brake Shoes here pictured were all worn down practically to the steel back.
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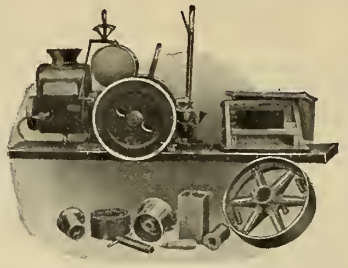
FAIRMONT  ENGINES

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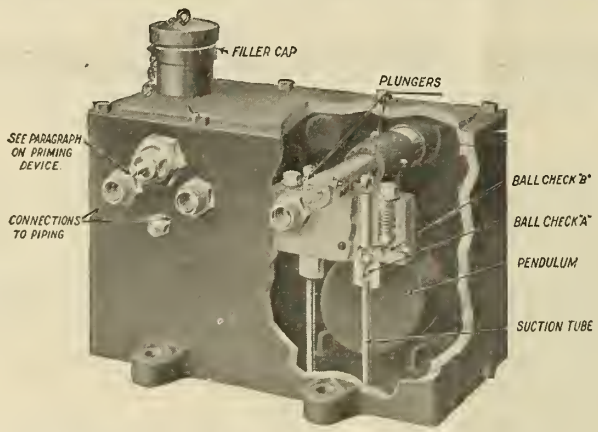

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The Parmelee Pipe Wrench

Price List C

Length Handle	Set No.	Pipe Handled	Set Complete	Extra Handle	Extra Girths
10 in.	1	¾, ½, ¾, 1 in.	$5.00	$2.25	¾, ½, ¾, 1 in. $ .75
20 in.	2½	¾, 1, 1¼, 1½, 2 in.	7.50	2.50	¾, 1, 1¼ in. 1.00 1½, 2 in. 1.25
25 in.	3½	1½, 2, 2½, 3 in.	7.50	3.00	1½, 2, 2½, 3 in. 1.25

Prices on larger sizes furnished upon application.

Rice Lewis & Sons, Limited

Toronto, Canada

"The Toothless Wonder"

Designed Especially to handle pipes spaced closely as in coil work. No.2½ wrench illustrated requires but three-quarter inch space between pipes.

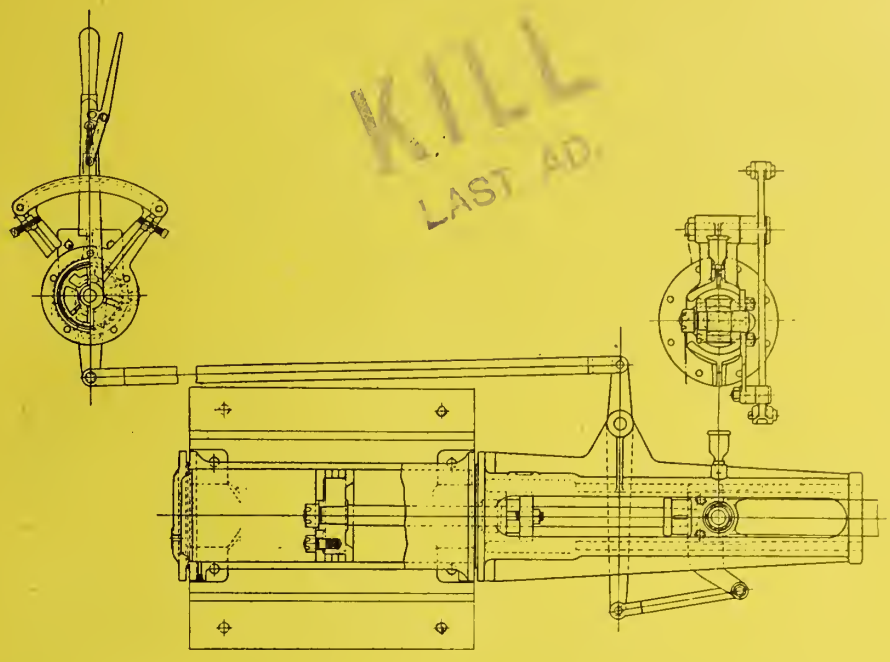
Positive Grip instantly taken. Operates without lost motion in stroke of handle. Can be locked or released easily in any position on the pipe.

Ratchet-like Action. Successive grips can be taken without having to hold the wrench on the pipe. By a slight twist of the handle, which is round and knurled, the wrench is locked in any position.

Can't Chew. The Parmelee will make or break the tightest joints without injuring pipe or threads, as it has no teeth. The only wrench suitable for galvanized pipe.

Can't Crush. The Parmelee will grip, without crushing pipe that has become weakened by long use or exposure and separate hopelessly rusted joints, saving its cost many times over.

KILL
LAST AD.



CASEY CAVIN POWER REVERSE GEAR

Verify This By Riding Engines

Strong men hesitate to unlatch reverse levers of big engines at high speed. They won't do it unless obliged to.

This means that power reverse is an absolute necessity to get earnings out of big power.

We offer Casey Cavin Reverse with the confidence of long and wide experience.

CANUCK SUPPLY CO.

LIMITED

Montreal Que. **Toronto Ont.** **Winnipeg Man.** **Vancouver B.C.**

24 inch Crank Slotter

Safety, simplicity and service are three of the features embodied in this machine. The first two, safety and simplicity are amply demonstrated in this illustration. Service is a feature which is proven only by actual operation. Our clients will testify enthusiastically as to this feature.

The John Bertram & Sons Company, Limited

DUNDAS, ONTARIO, CANADA

MONTREAL
723 Drummond Bldg.

VANCOUVER
609 Bank of Ottawa Bldg.

WINNIPEG
1205 McArthur Bldg.

Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 228 TORONTO, CANADA, FEBRUARY, 1917 Subscription Rates, Page 61

BERTRAM MACHINE TOOLS

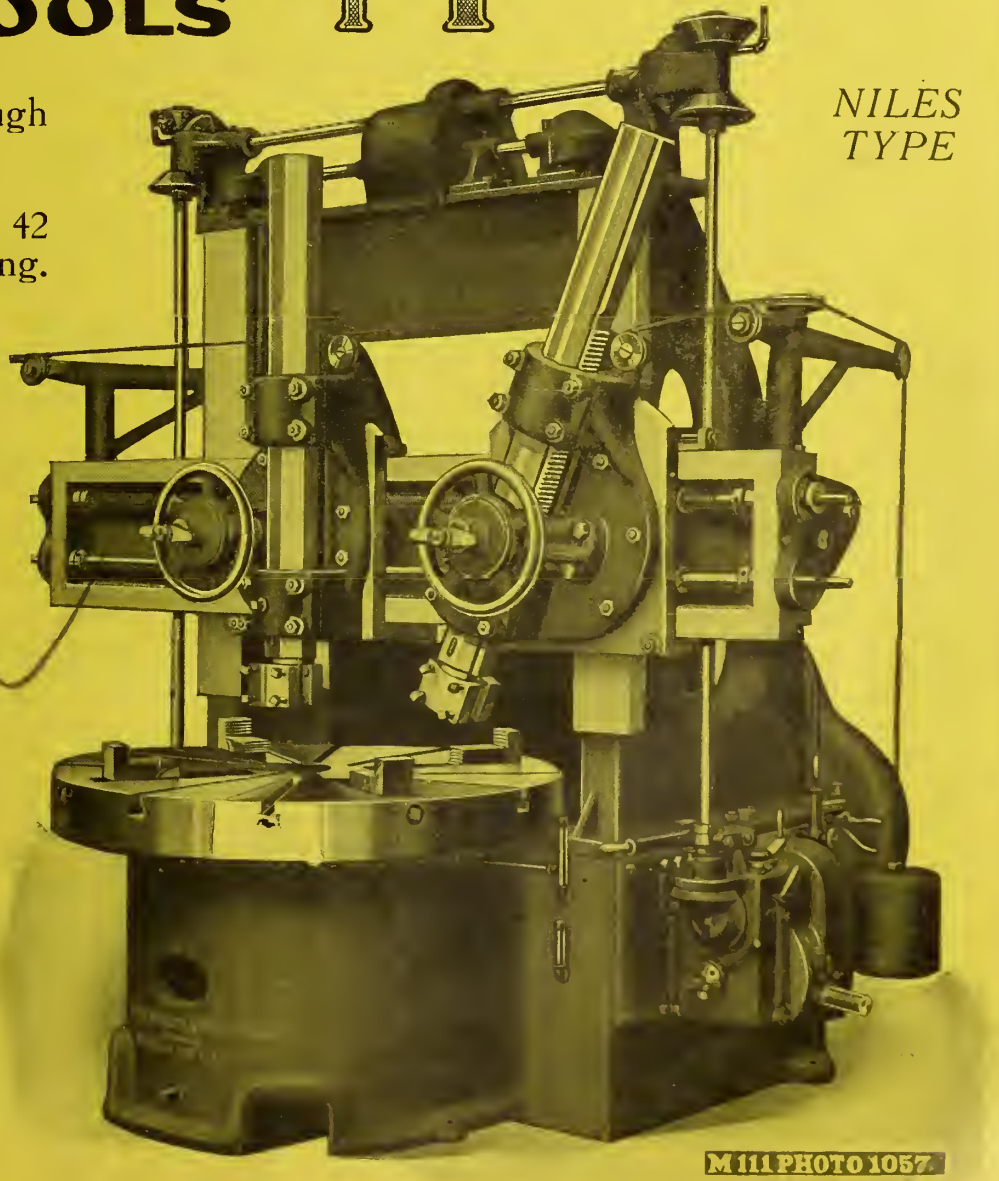
42-inch Vertical Boring and Turning Mill

Motor-Driven Through Speed Box.

Built in sizes from 42 inch to 100 inch swing.

Drop us a line for photographs and full particulars.

NILES TYPE



M 111 PHOTO 1057

The John Bertram and Sons Co. LIMITED

Dundas, Ont., Canada

MONTREAL, 723 Drummond Building

VANCOUVER, 609 Bank of Ottawa Building

WINNIPEG, 1205 McArthur Building

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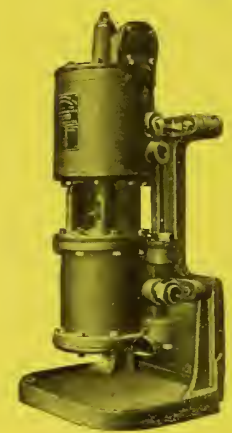
Westinghouse

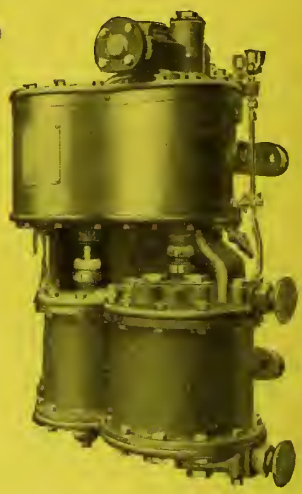
Steam-Driven Air Compressors

(Locomotive Type)



Westinghouse
Single Stage Compressor

Occupy minimum space, and are very durable and economical to maintain. They can be mounted on any substantial foundation; a post, column or wall, or a stand is provided making it easy to move the compressor about.



Westinghouse Cross-Compound
Compressor.

Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO, Traders Bank Bldg. MONTREAL, 52 Victoria Sq. OTTAWA, Ahearn & Soper, Ltd. HALIFAX, 105 Hollis St. FT. WILLIAM, Telfer Bldg.
WINNIPEG, 158 Portage Ave. E. , CALGARY, Grain Exchange Bldg. VANCOUVER, Bank of Ottawa Bldg. EDMONTON, 211 McLeod Bldg.

CANADIAN STEEL FOUNDRIES LIMITED

STEEL CASTINGS - MANGANESE STEEL CASTINGS
GRAY IRON AND SEMI STEEL CASTINGS - BAR STEEL
COUPLERS - COIL AND ELLIPTIC SPRINGS
STEAM AND ELECTRIC RAILWAY TRACK WORK

GENERAL OFFICES
TRANSPORTATION B'LD'G
— MONTREAL
LONDON (ENG.) OFFICE. —
TRAFALGAR HOUSE, WATERLOO PLACE.

WORKS
WELLAND, ONT.
POINT ST. CHARLES, MONTREAL
LONGUE POINTE, MONTREAL

Quality Service

Courtesy in Business

Fittingly framed and hanging in the Offices of one of the most important Public Service Corporations on this North American Continent is the following

'Did you say Please and Thank you?'

Broad minded men direct the destiny of that Corporation, men who know that public or private enterprises to be lastingly successful must operate for the public good.

Quality and Service are the two important factors in our business life today, but Courtesy is the door through which they must enter.

We are large producers of Hamilton Pig Iron and our output of Open Hearth Steel Blooms and Billets, Iron and Steel Bars of all shapes and size runs into enormous tonnage.

The products of our mills include practically everything that can be manufactured from Iron and Steel and these we distribute to thousands of satisfied customers.

Our business is an extensive one and a successful one. The World is our market: but our prosperity and success in the future, as in the past, depend upon the continued confidence, co-operation and good-will of the people we serve.

The Steel Company of Canada, Limited

HAMILTON TORONTO MONTREAL WINNIPEG

GALENA OILS

HAVE NO EQUAL IN

QUALITY, EFFICIENCY and ECONOMY

SOLE MANUFACTURERS OF

Celebrated Galena Coach, Engine and Car Oils

LUBRICATION ON A GUARANTEED BASIS

ELECTRIC RAILWAY LUBRICATION A SPECIALTY

Perfection Valve and Signal Oils

Galena Railway Safety Oil—Made especially for use in headlights, marker and classifictaion lamps.

Galena Long Time Burner Oil—For use in switch and semaphore lamps, and all lamps for long time burning, avoiding smoked and cracked chimneys and crusted wicks.

TESTS AND CORRESPONDENCE SOLICITED

Galena Signal Oil Company

Works

Franklin, Pa., and Toronto, Ont.

Canadian Sales Office—603 Shaughnessy Bldg., Montreal, Que.

Automatic Block Signaling

What It Will Do For You

An Appropriation for G-R-S Automatic Block Signals

should not be considered as an expenditure but as a gilt-edge investment, for it not only safe-guards your traffic, which is worth the investment, but it also facilitates your traffic and reduces operating expenses which means increased earnings.

Affords Safety to Your Traffic

1st—By a signal indication if the block section one or two miles ahead is occupied by a train.

2nd—By a signal indication if a switch or drawbridge is open, or if a train or car standing on a siding fouls the main line.

3rd—By a signal indication, of any break in the track circuit due to broken or removed rails.

It Will Pay For Itself

1st—By protection against costly accidents and delays incident to them.

2nd—By enabling you to maintain better schedules with faster trains, thereby reducing train operating costs.

3rd—By increasing the capacity of your road for handling traffic.

4th—By reason of the advertising value of Automatic Block Signals, increased confidence and increased traffic.

"Safety First"

GENERAL RAILWAY SIGNAL COMPANY

OF CANADA LIMITED

Office and Works, Lachine, Quebec

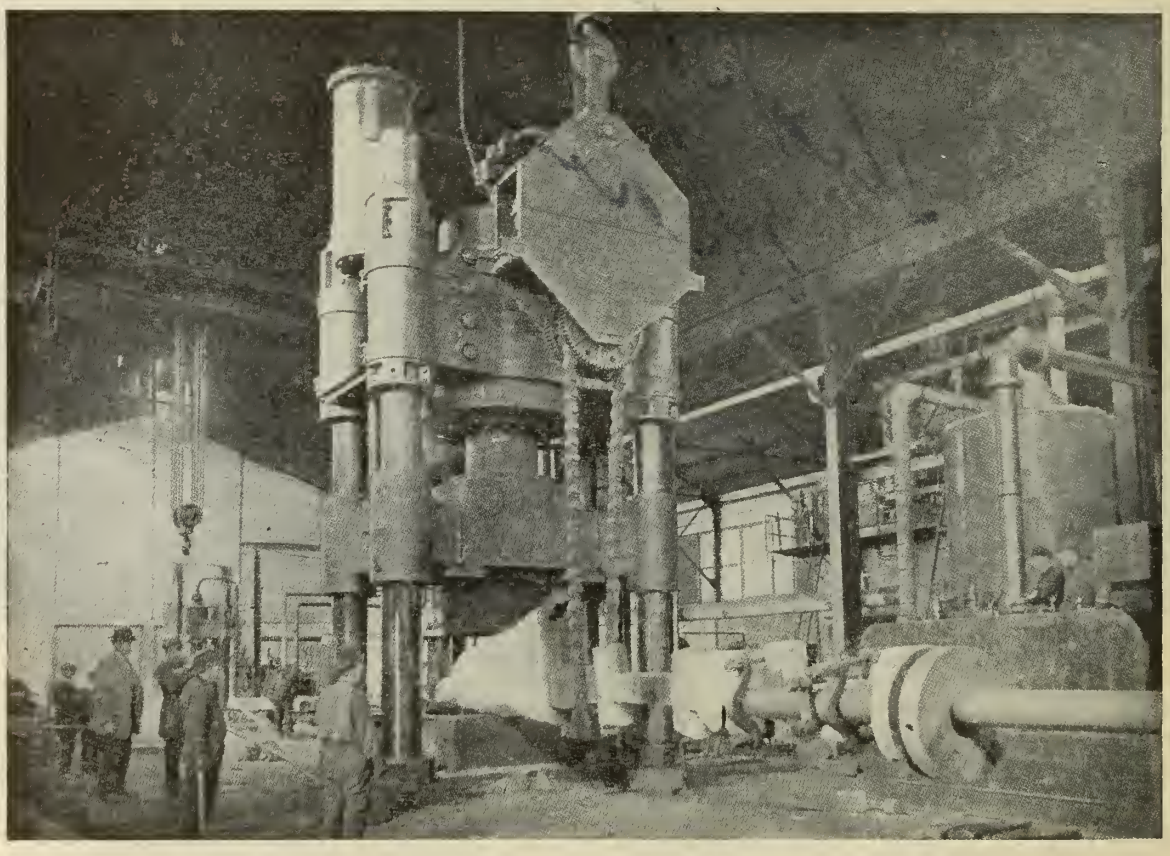
Branch Office, Winnipeg, Manitoba

Nova Scotia Steel & Coal Company

LIMITED

Manufacturers of Steel for Shrapnel Shells and Admiralty Forgings | Only Company in Canada producing Steel Ingots by the "Harmet" liquid process

Can supply Forgings up to 40 Tons in weight to all Admiralty and Lloyd's Tests and Specifications



FORGING A RUDDER FRAME

Why "Harmet" Liquid Process Steel Ingots are Superior to Ordinary Steel Ingots:—

1. Prevention of cracks due to shrinkage; of internal stresses and resulting cracks and fissures.
2. Early cessation in the crystallization of the metal, and the production of fine crystallization without cleavage planes.
3. Lessening of segregation, i.e., reduction of tendency of carbon and other impurities to concentrate in the central and upper parts of the ingot.
4. Prevention of "pipes" or interior cavities, and thus preservation of absolute solidity in the ingot.
5. Improvement in physical properties.
6. Reduction in waste of ingot.

OUR modern Steam Hydraulic Forge Shop at New Glasgow, N.S., part of which is shown above, and our large Steel Plant at Sydney Mines, N.S., equal the very best in America.

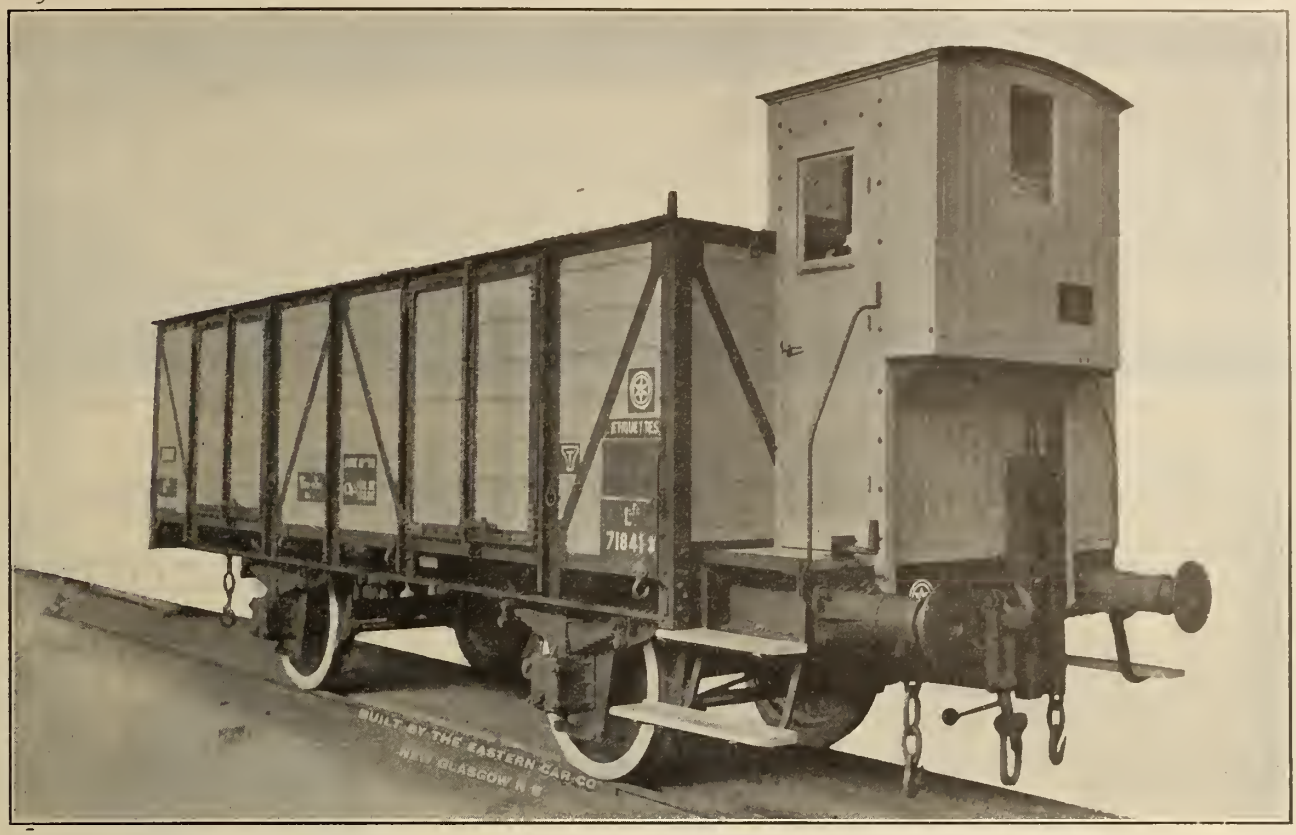
On the shortest notice, we can supply forgings of all shapes and sizes, made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods. It has always been the policy of "Scotia" to hold a position in the front rank of trade, and by the recent additions to plant, this policy has been maintained in a practical manner, bringing "Scotia's" equipment abreast of the best foreign forges.

For prices and full particulars, write to

Head Office, NEW GLASGOW, N.S.

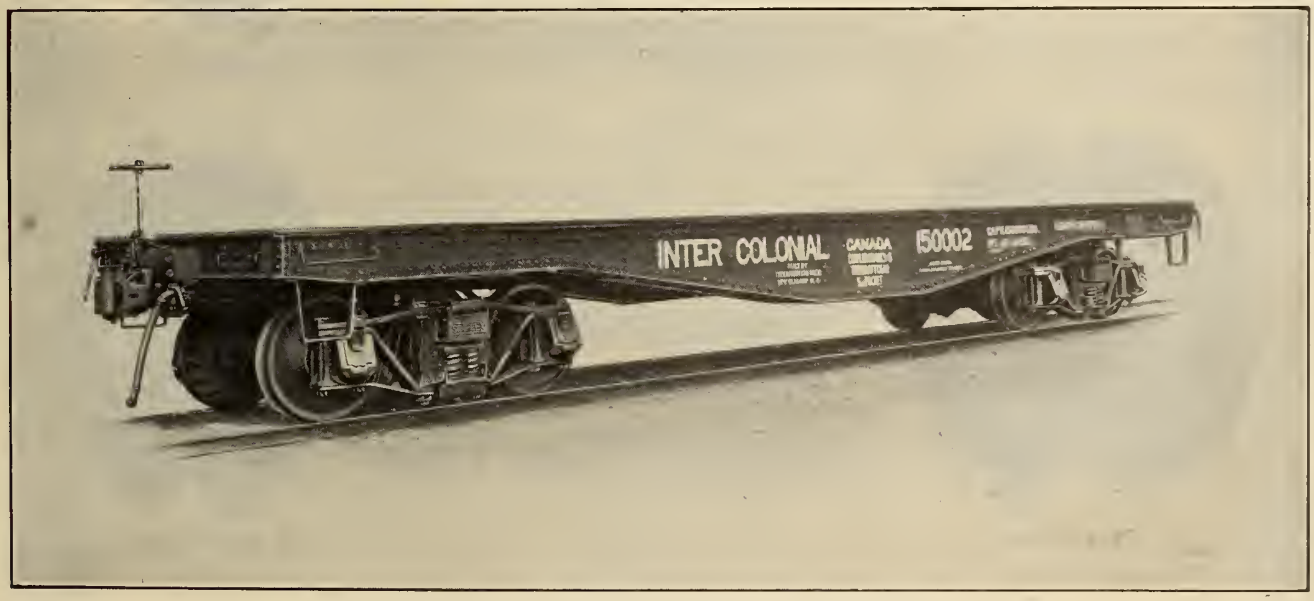
Western Sales Office, Room 14, Windsor Hotel, Montreal



ONE OF 2,000 GONDOLA CARS NOW UNDER CONSTRUCTION FOR THE FRENCH GOVERNMENT.

FREIGHT CARS TO FOREIGN ORDER

We have unexcelled water and rail shipping facilities for the export of freight cars of all types abroad or to United States markets. Our manufacturing capacity reaches to 40 cars per day. Although fully employed in filling and conducting negotiations for further foreign orders, our exceptional output facilities enable us both to take care of these and others in the order in which they are received.



75 TON SPECIAL PIT CAR FOR CANADIAN GOVERNMENT RAILWAYS.

FLAT CARS, CABOOSES, AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

Eastern Car Company, Limited

General Offices and Works, New Glasgow, N.S. **Montreal Office, Room 14 Windsor Hotel**

Produced Only by the Famous "Golden Glow" Mirror Reflectors

"Golden Glow," the name behind these famous headlights, stands for a powerful beam of golden-yellow light. A light which will wonderfully penetrate fog, and because the blue and violet rays are absorbed by the reflector, is non-blinding.

This "Golden Glow" light can be produced only by the "Golden Glow" Reflector, which is made from special glass, scientifically mixed and of a certain greenish-yellow color. Furthermore, "Golden Glow" Reflectors are ground and polished to a true parabola by special patented machinery, and cannot be duplicated,

Insist on "Golden Glow" Headlights and you'll get double efficiency at less cost for operation.

Type SR-95

Type SE-95

There Is No Other "Golden Glow" Reflector—Our Patented Process Fixes That

Type SMG-95

Have us demonstrate them on your cars.

Electric Service Supplies Co.

Manufacturers

PHILADELPHIA NEW YORK CHICAGO

17th and Cambria Sts. 50 Church St. Monadnock Bldg.

Lyman Tube & Supply Co., Ltd.

Canadian Distributors

MONTREAL 323 St. James St.

TORONTO 33 Melinda St.

Northern Electric

Trolley Wire

What happens when the winter storms hits your line? Do you depend on an inferior grade of trolley wire, or will your equipment stand up under any test?

We manufacture all standard sizes of round and grooved trolley wire. Special attention in the drawing of the wire assures a product of the highest possible tensile strength and wearing qualities. The chance of disorganized traffic, due to a broken wire—with consequent loss of revenue, and ill-feeling of the public—is thus reduced to a minimum.

We also manufacture all other classes of wires and cables used in electric railway work, such as Bare and Insulated Feeder Cables, Bonding Cables, Lead-covered Feeder Cables, Special Rubber-insulated Wires and Cables for Car Wiring, Magnet Wire for Repairing Motors, etc.

Our nearest house will gladly quote on your requirements.

Northern Electric Company
LIMITED
Montreal Halifax Toronto Winnipeg
Regina Calgary Vancouver

"DOMINION" Wire Rope

is the standard for all types of
DREDGES, HOISTS and
HAULAGE

The Dominion Wire Rope Company, Limited

Montreal and Toronto

Cut Down Unloading Time — Use General Service Cars

OTIS DUMP CARS

—PATENTED—

—PAMPHLET No. 16 TELLS ABOUT THEM—

Dumps Load In One Minute

—

One Man Operation

—

Simplest, Safest and Best Door Operating Gear

—

Dumps Clear of the Rail

THE STANDARD COAL CAR

Built in Any Size or Capacity.

—

All Steel, Wood or Composite

—

For Standard or Special Service

—

Thousands in Use

The Most Practical Car for all Bulk Freight. A Dumping Gondola for all Services.

DESIGNED AND BUILT BY

The HART-OTIS CAR CO., Limited, MONTREAL

—SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA—

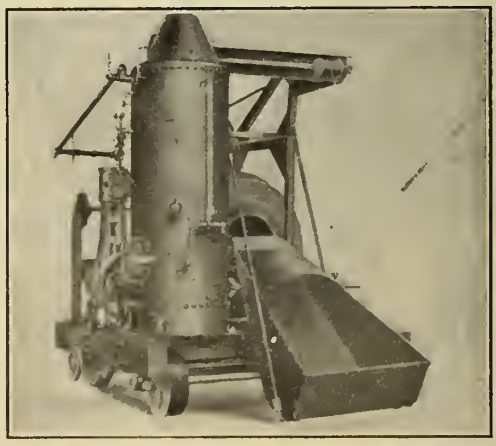
"HAYWARD" BUCKETS

For Quick Action

In Gravel Pit, Trench or Channel.

"RANSOME" MIXERS

Give the largest daily capacity with the lowest cost of upkeep.

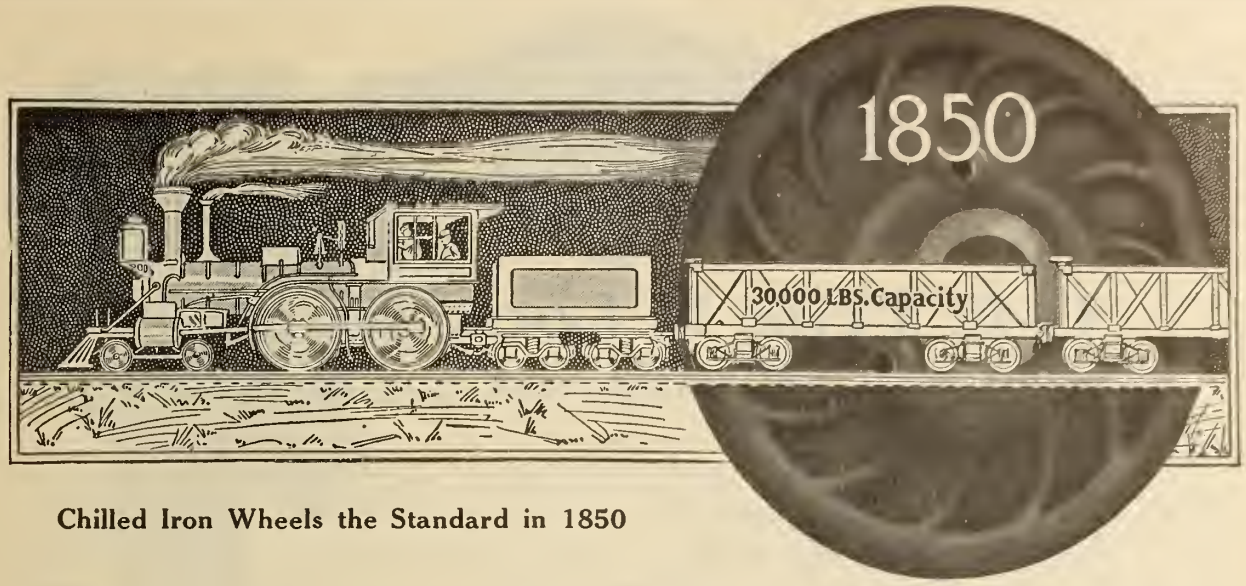


JACKS — CAR REPLACERS — TOOLS

Branch:
108 Mail Building
TORONTO

F·H·Hopkins & Co

Head Office:
MONTREAL



Chilled Iron Wheels the Standard in 1850

The Wonderful Single Service Chilled Iron Wheel

Considered from a chemical, physical and metallurgical standpoint, the Chilled Iron Wheel possesses certain inherent properties which are not found in other metals.

The higher combined carbon in the tread or running surface of the wheel produces the hardness which is so necessary for a maximum wear and the chilled treads will not crush or flow under the heaviest traffic pressure.

The plates are soft with an open fracture which enables the wheel to resist temperature stresses due to brake application.

The hubs are soft, which insures a strong and perfect axle fit.

These conditions are ideal for service and there is no other metal that possesses this graded hardness of structure.

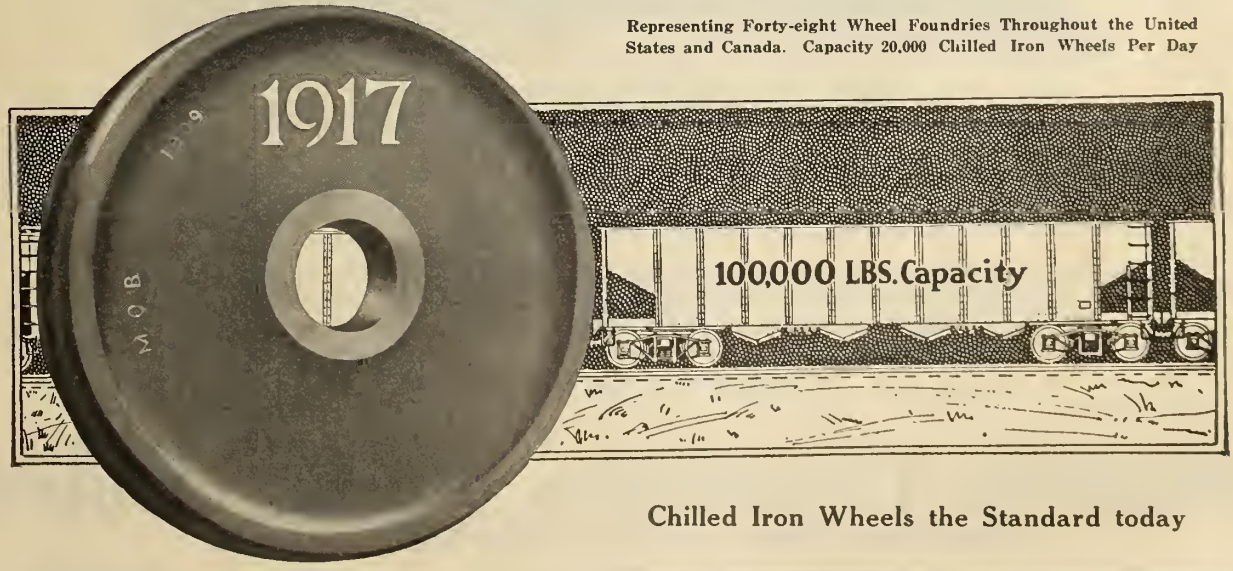
The single service, one-wear chilled iron wheel, because of its hardness, will give a greater mileage per unit of metal worn away than any other type of wheel.

25,000,000 now running.

Association of Manufacturers of Chilled Car Wheels

1228 McCormick Building, Chicago

Representing Forty-eight Wheel Foundries Throughout the United States and Canada. Capacity 20,000 Chilled Iron Wheels Per Day



Chilled Iron Wheels the Standard today

KILL
LAST AD

O-B Type N Lock Hanger

Any trolley ear fits tightly against O-B Type N Lock Hanger when ear is aligned with wire.

Head of stud has limited vertical movement in opposition to lock-washer. Both are enclosed in weather-proof shell which is molded into the insulation.

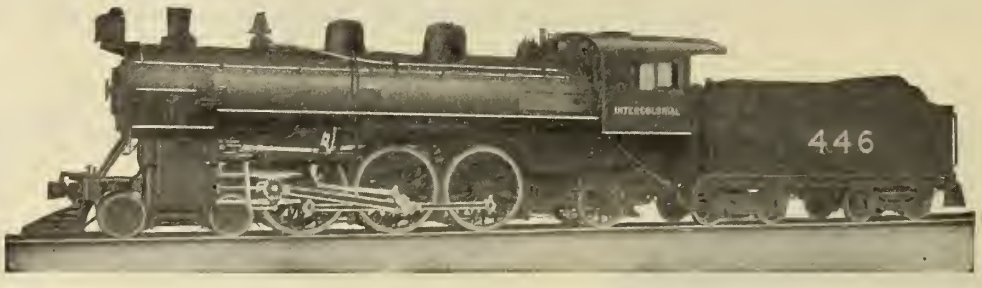
Trolley ear is screwed up tight against bearing surface of hanger. Then it can be turned further until it is aligned with wire. Consequently there is no vibration, which would result in stripped threads, between hanger and ear.

Insulation is Dirigo Insulating compound. All metal parts are O-B sherardized.

Listed in catalogue No. 16 together with the complete line of O-B Trolley Materials.

The Ohio Brass Company, Mansfield, Ohio

Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE — INTERCOLONIAL RAILWAY
Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

Norton Jacks

For all Classes of Service

10 to 100 Tons Capacity

In Stock for Immediate Shipment.

Send for Illustrated Catalogue No. 29.

A. O. Norton, Limited

Coaticook, Prov. Que., Canada

Stock Carried by Canadian Agents: MUSSENS LIMITED
Montreal Toronto Winnipeg Cobalt Calgary Vancouver

PREPAREDNESS—Many of our customers have been applying large numbers, and in some cases complete installations, of Tate Flexible Staybolts to their locomotive fireboxes, and thus are prepared to handle the heavy business during the present season.

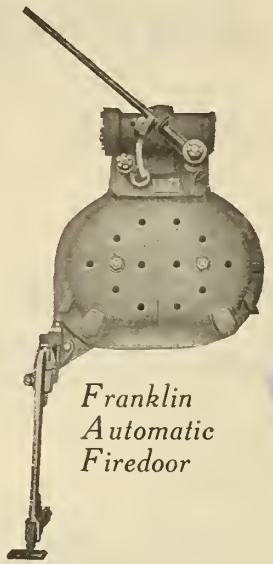
THE TATE FLEXIBLE STAYBOLT has been used quite extensively since 1904 in the locomotive fire boxes, and its service records all go to prove that it has done more to improve conditions of staying and preserve the life of the firebox than any staybolt so far used.

WE RECOMMEND THIS BOLT to the railroads of Canada and to all users of the firebox type of boiler where staybolts are necessary, with the assurance that it will be found strong, serviceable, economic and most effective in reducing staybolt breakage and firebox repairs.

OVER 16,000,000 BOLTS IN SERVICE.

FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.



Franklin Automatic Firedoor

Quick Action

250 degrees drop in temperature of firebox sheets results from a firedoor open for 15 seconds.

In a recent discussion of Pulverized Fuel before the American Society of Mechanical Engineers this fact was mentioned as an argument for that fuel.

It is even stronger as an argument for the Franklin Automatic Firedoor because firedoors are in general use today.

Franklin Railway Supply Company

TRANSPORTATION BLDG. MONTREAL

GRAND TRUNK RAILWAY SYSTEM

THE

DOUBLE TRACK ROUTE

WINTER TOURS to CALIFORNIA

AND ALL

PACIFIC COAST POINTS, FLORIDA, TEXAS, NEW ORLEANS, ETC.

Winter Tours Tickets now on sale. Stop over privilege allowed.

Apply to any Agent of the Company for particulars.

G. T. BELL,
Passenger Traffic Manager,
MONTREAL

W. S. COOKSON,
General Passenger Agent,
MONTREAL

RESULTS COUNT

That's Why 480 Railroad Shops Are Using Thermit

Thermit offers the only sure and reliable repair for locomotive frames and other heavy sections.

The superheated liquid Thermit steel is produced in bulk and poured all at once into a mold surrounding a broken section, resulting in the perfect amalgamation of the Thermit steel with the parts with which it comes in contact. The fact that those parts are first preheated, makes the weld doubly sure.

The operation of welding locomotive frames is easily accomplished, without removing the frame from position, and with very little dismantling, no matter if the frame be broken in the splice, jaw, next to the cylinder saddle, or at any other point. The engine is returned to service in from ten to twelve hours.

Hundreds of thousands of pounds of Thermit are being used annually by railroad companies in the United States and Canada.

There is only one reason for this, and that is that Thermit produces results and we all know that "results count."

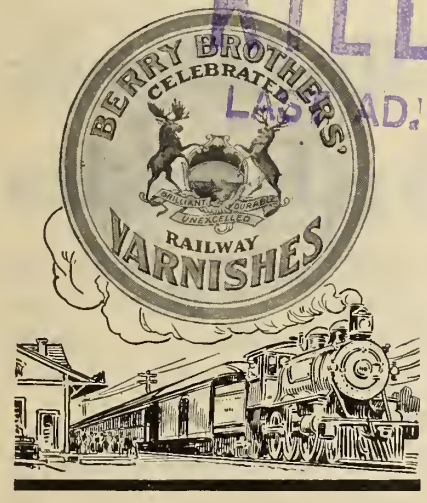
Our pamphlet No. 2144 will be of interest.

All Thermit and Thermit appliances are made in our Canadian shops.

GOLDSCHMIDT THERMIT COMPANY

103 Richmond St., W., Toronto, Ont.

329-333 Folsom St., San Francisco. Equitable Bldg., 120 Broadway, New York
7300 So. Chicago Ave., Chicago



Berry Brothers' Railway Varnishes

are of par value and yield big dividends by uniting efficiency and economy—the highest finishing possibilities at the lowest legitimate cost.

OUTSIDE COACH RUBBING

A very pale, easy working varnish, bodies up well, dries quickly and can be rubbed in two days, giving a fine foundation for the finishing coats.

D. W. H. Moreland,
Manager of
Railroad Department

BERRY BROTHERS
(INCORPORATED)
World's Largest Varnish Makers
WALKERVILLE, ONT.

Send for our catalog of railway varnishes.

Metal Protection

In any kind of metal construction the element of rust is such a destructive factor that the best protection obtainable is unquestionably the cheapest.

CARTER'S DRY RED LEAD

is the highest standard quality and affords a perfect sealing coat that absolutely protects all kinds of metal from rust and corrosion.

We make Orange Dry Lead and Litharge also Special Dry Lead and Litharge for Color, Varnish and Rubber Makers. Oxides for Storage Batteries and Pottery.

All products are wholly Canadian made.

Quotations sent upon request.

The Carter White Lead Company, Limited

91 Delorimier Avenue, MONTREAL

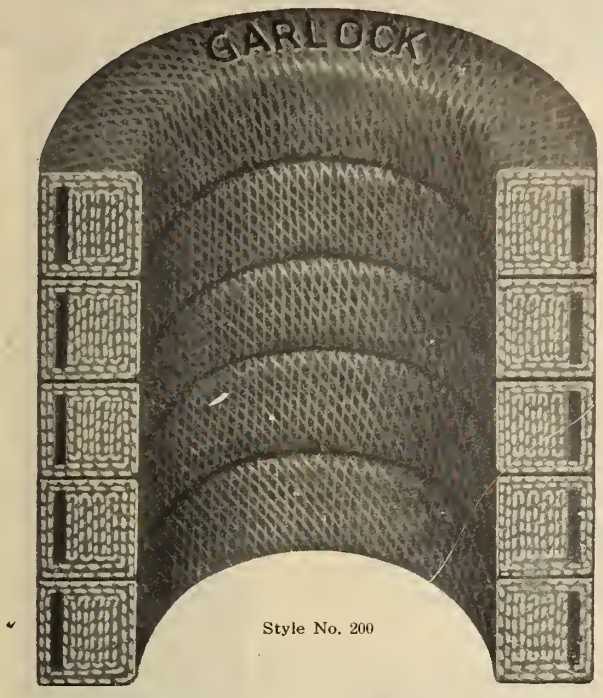
Re-Discover The Rockies

The Transcontinental Line of the Canadian Northern Railway traverses a Section of the Canadian Rockies of exceptional grandeur, possessing characteristics absolutely distinct from those of older and more Southerly Routes.

Those who are travelling to Vancouver, whether on business or for pleasure, will find themselves well repaid for their Patronage of our Line, by the opportunity of traversing a new Section of Canada, and of recovering that thrill aroused by their first glimpse of towering Snow-Capped Peaks and Rugged Canyons.

For Literature and information apply to General Passenger Dept., 68 King St. E., Toronto, Ont., 226 St. James St., Montreal, Que., or Union Station, Winnipeg, Man.

Travel Canadian Northern all the Way



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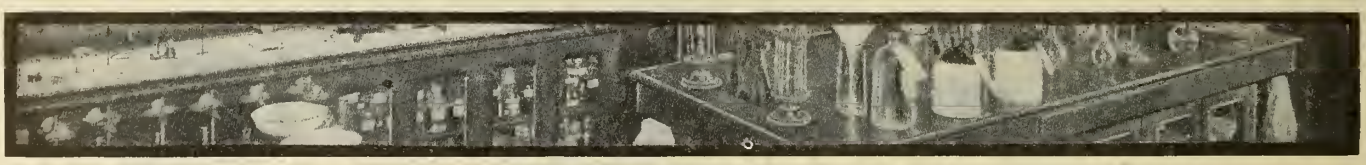

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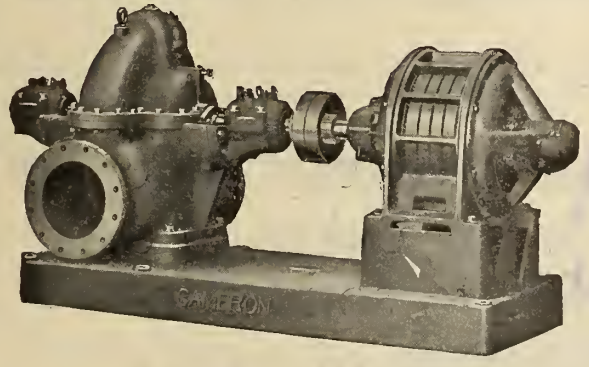

possess features of design and construction which give them every advantage, simplicity, reliability, low operating cost and high efficiency.

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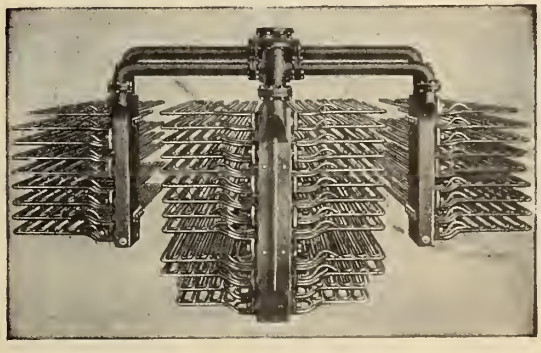
4. It reduces the size of the bunkers, thereby reducing the draft of the vessel with a given cargo, or making possible an increase in revenue cargo.



5. It results in a saving of fuel over saturated plants, both operating under the same draft conditions, of 10% to 20%.
6. It reduces the maintenance costs by the prevention of water hammer, leaky flanges, and condensation in the cylinders.
7. It does not prevent rapid, thorough, and frequent cleaning of the tubes.
8. Its construction provides easy access to all screwed joints and the easy removal of the parts.

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Write our Canadian Representatives Allen General Supplies, Limited they will be pleased to give you complete information as to any of the above as well as our other lines.

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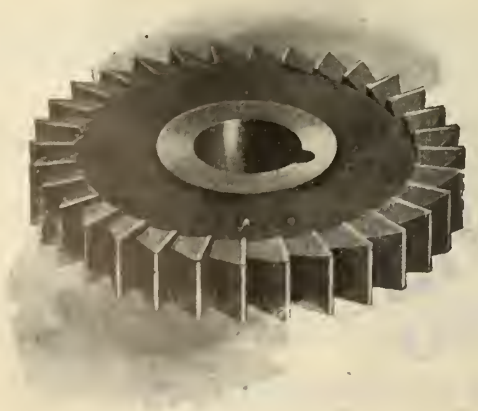

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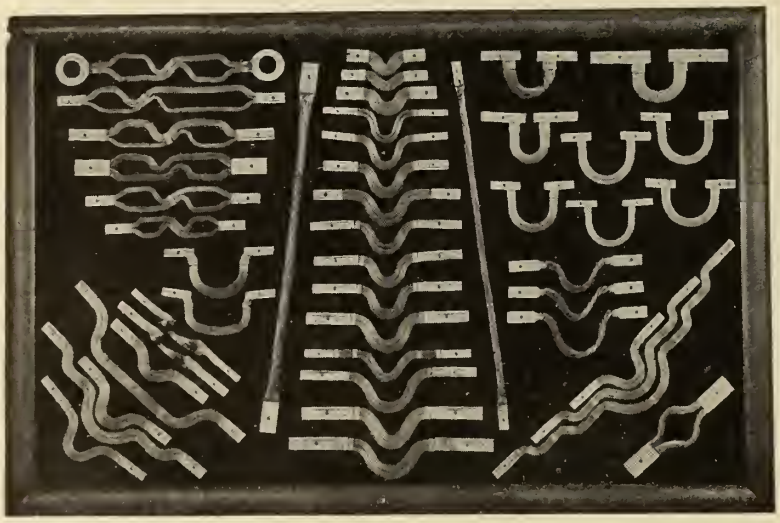

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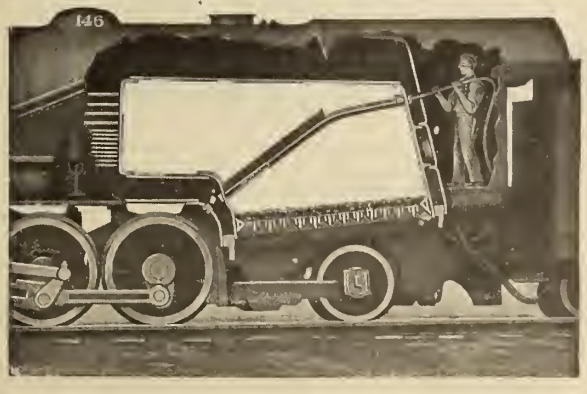
Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of Locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

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28 SERVICE BRANCHES THROUGHOUT CANADA.

Canadian Railway and Marine World

February, 1917.

Great Northern Railway Terminals in Vancouver.

In connection with the erection of its terminals at Vancouver, B.C., the Vancouver, Victoria & Eastern Ry., a subsidiary of the Great Northern Ry., U.S.A., has filled in the whole of the area from the southern boundary of the property, which it purchased from the city, to the shore line on the north side of False Creek. This area was previously part of the bed of False Creek. The average depth of the fill required to bring the property up to the approximate level of Main St. was about 12 ft. The company also owns considerable property on the south side of False Creek.

The Passenger Station, which is about completed, is L shaped, the main front facing west. It is about 375 ft. east of Main St. As the whole property is a fill, the building is supported on a pile foundation, cluster piles being driven and cut off below the line of perpetual saturation. Upon these concrete piers were poured, which support reinforced concrete beams, which in turn carry the exterior walls, columns and floors. The skeleton of the building is reinforced concrete, hollow tile, and concrete floors and roof. The exterior has a granite base, carrying up and around all exterior doors terra-cotta surbase, and red brick above, with terra-cotta trimmings and cornice.

The centre portion, 45 ft. high, and ap- main waiting room, 60 x 100 ft., which runs the full height. Flanked on either side are two wings, about 56 x 65 ft, two stories high. The upper floors of the wings will be used by the Great Northern and Northern Pacific Railways for offices.

The main waiting room will be panelled in Alaska marble, 7 ft. high, and will have marble and terrazzo floors and ornamental plaster ceiling. Provision has been made in the plastering of the end walls for placing oil paintings showing the Glacier and Yellowstone National Parks. The lighting fixtures are of special design, and will be executed in plaster. Alcoves off the main waiting room will be fitted with seats and tables for the public. The ticket office is in the centre of the east wall, opposite the two main entrances. There are two principal entrances to the main waiting room from the west, directly opposite to which are two entrances leading to a glass covered concourse, running the full length of the building, which in turn leads to 11 tracks, the platforms being covered by umbrella roofs, 700 ft. long. Off the main waiting room in the south wing are located the smoking room, which has access to the concourse, women's retiring room and lavatories. Provision is also made in the south wing for an immigrants' room and lavatories, but having no connection with the main waiting room. A corridor, 12 ft. wide, runs down the centre of the north wing to a carriage entrance. Off the waiting room in the north wing is the parcels and news office and station master's validating and information offices. Off the corridor leading to the carriage entrance are an exhibition room, a room for station officials and a checking lobby which is connected direct to the baggage room.

The leg of the L, or baggage room wing, is a one story building containing the baggage room, bonded baggage, Canadian and United States customs, trainmen's room, lavatory, mail room, Great Northern and Northern Express. The leg of the L is about 228 ft. long by 42 ft.

It is the intention to lay out the ground in front of the passenger station in an attractive manner. The station will be reached by two driveways from Main St., and the remaining portion, not taken up by drives and walks, will be laid out with lawn and trees.

A hundred and fifty feet east of the baggage room wing, and in a direct line, is the power house, 50 ft. x 42 ft., with a brick stack at the east end 90 ft. high. The power house will supply heat to the different buildings through an underground reinforced concrete tunnel, steam to the passenger cars at the stub tracks, and to the passenger car yards. In connection there is a transformer room and a motor driven air compressor. Provision is made in the boiler house for three 125 h.p. return tubular boilers.

There are two freight sheds, the Great Northern one being next the passenger station and the Northern Pacific farther over. They are both 50 x 600 ft. long, set back 15 ft. from Park Lane, providing a small parking strip in front of the buildings. The Great Northern freight shed is separated from the passenger station at the narrowest point by a 60 ft. driveway. Between the two sheds there are six tracks, and on the north side of the Northern Pacific shed there will be a 60 ft. driveway, and then will come the team tracks. The westerly 66 ft. of both sheds, adjoining Park Lane, are two stories high, containing the office portion, the remainder being simply a one story shed, cut in the middle by a fire wall, the easterly half for bonded goods and the westerly half for free goods. Customs accommodation is also provided in both sheds. The foundations for the freight sheds are similar to the passenger station, above grade a granite base, brick with terra-cotta trimmings, wooden floors.

Passenger Station at Vancouver for Great Northern and Northern Pacific Railways' Joint Use.

Locomotive House.—At the east end of the yard there will be a 15 stall locomotive house, with a machine shop and boiler house in connection. The depth of the locomotive house will be 92 ft., and the machine shop and boiler house will be 50 x 160 ft. The foundations will be similar to the passenger station with brick and wood construction above grade. In close proximity to the locomotive house will be an oil house, 20 x 36 ft., and a store house, 30 x 73 ft., of similar construction to the machine shop, etc.

In connection with the passenger car yards there will be built a commissary building, 100 x 40 ft; an oil house, 20 x 20 ft.; car repairers' building, 30 x 20 ft; car foreman's building, 20 x 12 ft.; car cleaners' building, 16 x 20 ft.; carpet cleaning building, 16 x 20 ft., and a coal house, 40 x 20 ft.

Under the direction of A. H. Hogeland, Chief Engineer, G.N.R., the buildings were designed by Fred. L. Townley, architect, Vancouver, in whose office all the drawings were made and under whose supervision the buildings have been erected.

Grand Trunk Railway Demurrage Regulations at Portland.

The Interstate Commerce Commission gave the following judgment recently in a case against the G.T.R.:—Complainants are the National League of Commission Merchants of the United States, a corporation, with its principal office at New York, N.Y., and certain produce dealers of Boston, Mass., members of the complainant named. They allege that defendant's demurrage regulations governing carload shipments of apples and vegetables awaiting transshipment at Portland, Me., are unreasonable and unjustly discriminatory as compared with the demurrage regulations of the Maine Central Rd. governing such shipments at the same port. The evidence adduced relates only to regulations governing shipments of apples. Reparation is asked for demurrage charges collected at Portland on certain shipments of apples in 1914 and 1915. The shipments described in the complaint originated at points in Maine, either on defendant's line or on the Maine Central Rd., and were delivered by defendant. Demurrage charges were collected at Portland in accordance with the following taiff rules:—"Cars containing freight for transshipment to vessel will be allowed such free time at the port as may be provided in the tariffs of carriers."

The tariff containing this rule provided 48 hours (2 days) free time, exclusive of Sundays and legal holidays, for unloading all commodities at Portland. Complainants contend that these tariff provisions are incomplete and unjustly discriminatory because the Maine Central Rd.'s tariff, applicable at Portland, contains the following rule:—"Demurrage on transshipped traffic: Ten days free time (including Sundays and legal holidays) will be allowed for unloading carload shipments forwarded by water, where there are no through rates, viz.: Apples * * * for transshipment to vessels at Portland, Me. * * *"

Regular line trans-Atlantic steamers do not dock at the Maine Central piers at Portland. That is done only by occasional vessels specially chartered. Complainants therefore are compelled as a rule to use the G.T.R. facilities to effect transshipment of their apples. The mere fact that defendant's demurrage regulations at Portland are different from those of the Maine Central Rd. does not establish unlawful discrimination. An allowance of more than 10 days free time was insisted upon by complainants at the hearing. They urge that this free time is necessary, as the steamships frequently are unable on account of weather conditions to arrive on scheduled time. The average detention at Portland on the shipments was approximately 7 days, exclusive of Sundays and legal holidays; the minimum time was 3 days and the maximum 39 days. Complainants showed that 30 days free time applied at Boston, New York, Philadelphia, and Baltimore, on shipments of apples awaiting transshipment, and, in general, on all freight for export. Since the hearing the free time allowance at the points named applicable on shipments for export moving on local bills of lading to the respective ports has been materially reduced. The circumstances and conditions obtaining at Portland are not shown to be similar to those obtaining at the larger eastern ports, nor is it disclosed what would be a reasonable free time allowance at Portland. No evidence was adduced to show why any of the shipments in issue were detained beyond the free time, except the general statements that tentative bookings were sometimes cancelled and weather conditions sometimes delayed the steamships.

We find that the demurrage regulations in issue are not shown to be or to have been unreasonable or unduly prejudicial. At the hearing complainants sought to enlarge the scope of the complaint by injecting an issue of undue prejudice predicated on defendant's practice of imposing no demurrage charges at Portland on shipments of apples from Canadian points for export, while contemporaneously exacting such charges at Portland on shipments from points in Maine. This issue was not raised by the pleadings and will not be considered. An order will be entered dismissing the complaint.

Birthdays of Transportation Men in February.

Many happy returns of the day to:—

B. H. Bennett, General Agent, Chicago & North Western Ry., Toronto, born at Cobourg, Ont., Feb. 6, 1858.

F. L. C. Bond, Division Engineer, Eastern Lines, G.T.R., Montreal, born there Feb. 21, 1877.

T. Britt, General Fuel Agent, C.P.R., Montreal, born there Feb. 3, 1871.

G. E. Bunting, General Western Freight Agent, Allan Line Steamships, and Manager, Allan & Co., Chicago, Ill., born at Toronto, Feb. 8, 1873.

J. S. Byrom, General Superintendent, Sleeping, Dining and Parlor Cars, and News Service, Eastern Lines, C.P.R., Montreal, born at Jersey City, N.Y., Feb. 10, 1872.

J. J. Callahan, Superintendent, Oshawa Ry., Oshawa, Ont., born at New Glasgow, Que., Feb. 25, 1875.

H. R. Charlton, General Advertising Agent, G.T.R. and G.T.P.R., Montreal, born at St. Johns, Que., Feb. 9, 1866.

R. Colclough, Superintendent, District 1, Transcontinental Division, Canadian Government Railways, Quebec, Que., born at Bic, Que., Feb. 24, 1871.

F. W. Cooper, A.M.Can.Soc.C.E., ex-Superintendent, Schreiber Division, Algoma District, C.P.R., now Manager, Track Specialty Department, W. W. Butler Co., Montreal, born at London, Ont., Feb. 16, 1880.

R. Crawford, Northwest Agent, Northern Navigation Co., Winnipeg, Man., born at Kingston, Ont., Feb. 21, 1870.

A. J. Donegan, Superintendent, Algoma Eastern Ry., Sudbury, Ont., born at Perth, Ont., Feb. 17, 1872.

R. W. Drew, Division Freight Agent, Saskatchewan District, C.P.R., Regina, born at Kingston, Ont., Feb. 17, 1874.

E. A. Evans, M.Can.Soc.C.E., ex-General Manager and Chief Engineer, Quebec Ry., Light & Power Co., Quebec, born at Kensington, London, England, Feb. 26, 1855.

Goodwin Ford, General Superintendent, Western Lines, Dominion Express Co., Winnipeg, born at Bordentown, N.J., Feb. 23, 1859.

J. C. Holden, A.M.Can.Soc.C.E., Division Engineer, C.P.R., Winnipeg, born at St. John, N.B., Feb., 1876.

T. C. Hudson, Division Master Mechanic, Quebec Grand Division, Canadian Northern Ry., Joliette, Que., born at Brockville, Ont., Feb. 20, 1873.

H. Hulatt, Manager of Telegraphs, G.T.R. and G.T.P.R., Montreal, born in London, England, Feb. 15, 1883.

C. Gardner Johnson, Lloyd's Agent for British Columbia, Vancouver, B.C., born at Dunblane, Scotland, Feb. 8, 1857.

F. C. Johnson, Night Locomotive Foreman, C.P.R., North Transcona, Man., born at Montreal, Feb. 26, 1885.

John McCraw, General Agent, Central Vermont Ry., New London, Conn., born at Craigvale, Ont., Feb. 6, 1868.

G. L. McCrea, Local Freight Agent, C.P.R., Vancouver, B.C., born at Springtown, Ont., Feb. 9, 1876.

T. McNabb, ex-Master Mechanic, Alberta Ry. & Irrigation Co., now of Picture Butte, Alta., born in Scotland, Feb. 16, 1849.

J. K. McNellie, General Superintendent, Canadian Government Railways, Moncton, N.B., born at Toronto, Feb. 23, 1874.

D. C. Macdonald, Assistant General Claims Agent, C.P.R., Winnipeg, born at Elmsdale, N.S., Feb. 9, 1874.

C. S. Maharg, Superintendent, Brandon Division, Manitoba District, C.P.R., Brandon, born in Dufferin County, Ont., Feb. 4, 1867.

V. J. Melsted, ex-Engineer of Water Service, Western Lines, C.P.R., Winnipeg, born at Gardar, N.D., Feb. 20, 1887.

G. A. Montgomery, Vice President and General Manager, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont., born at Bradford, Ont., Feb. 11, 1871.

A. Z. Mullins, Commercial Agent, G.T.R., Grand Rapids, Mich., born at Appin, Ont., Feb. 14, 1862.

M. G. Murphy, General Agent, Passenger Department, C.P.R., Detroit, Mich., born at Halifax, N.S., Feb. 26, 1878.

J. E. Proctor, District Passenger Agent, C.P.R., Regina, Sask., born at Sarnia, Ont., Feb. 17, 1878.

C. T. Ridalls, Car Foreman, C.P.R., London, Ont., born at St. Heliers, Jersey, Channel Islands, Feb. 8, 1864.

J. E. Robitaille, Treasurer, Roberval-Saguenay Ry., Chicoutimi, Que., born at Quebec, Feb. 17, 1870.

A. E. Rosevear, General Freight Agent, G.T.P.R. and Grand Trunk Pacific Coast Steamship Co., Winnipeg, born at Montreal, Feb. 20, 1863.

J. G. Scott, ex-General Manager, Quebec & Lake St. John Ry., Quebec, born there Feb. 13, 1847.

J. J. Scully, General Superintendent, Algoma District, C.P.R., North Bay, Ont., born at Montreal, Feb. 3, 1872.

G. Spencer, Chief Operating Officer, Board of Railway Commissioners, Ottawa, born in London, Eng., Feb. 21, 1865.

R. H. Sperling, Advisor to the Board, British Columbia Electric Ry., London, Eng., born there, Feb. 9, 1876.

H. E. Suckling, Treasurer, C.P.R., Montreal, born at Gibraltar, Feb. 27, 1851.

Hugh Sutherland, Executive Agent, Canadian Northern Ry., Winnipeg, Man., born at New London, P.E.I., Feb. 22, 1845.

F. L. Wanklyn, M.Can.Soc.C.E., General Executive Assistant, C.P.R., Montreal, born at Buenos Ayres, Feb. 25, 1860.

J. R. Watson, Assistant Superintendent, Sleeping, Dining and Parlor Cars, and News Service, Eastern Lines, C.P.R., Montreal, born at Morpeth, Eng., Feb. 8, 1873.

John L. Weller, M.Can.Soc.C.E., Engineer in Charge, Welland Ship Canal, St. Catharines, Ont., born at Cobourg, Ont., Feb. 13, 1862.

A. Williams, Superintendent, Brownville Division, New Brunswick District, C.P.R., Brownville Jct., Me., born at Mono Road, Ont., Feb. 22, 1872.

Railway Passenger Car Painting and Varnishing.

By Thomas Marshall, Foreman Painter, Canadian Pacific Railway, Montreal.

The history of paints and varnishes dates back to the dark ages. Even the old Egyptian mummies were wrapped in canvas and sealed with specially prepared gums or varnishes to protect them from the atmosphere; and just as today paints and varnishes are used to protect wood and metal surfaces, they also perform two functions, protecting from weather and beautifying the article they are applied to. In dealing with paints and varnishes, it would be folly on my part to undertake to go into the questions fully, as there can be a great many papers written on the subject, with no end of discussion in connection with them. For instance, there is the chemical end, which treats of the manufacturing of chemical colors and the analysis of the various kinds of paints and varnishes. Then there is the manufacturing grinding and toning of the colors, and, last, but not least, the application of them and the many ways in which they are used and the various articles they are used on. So I will only try to give some idea of how they are used in connection with passenger car painting, and even then it will only be in a very limited way, as it would otherwise take up altogether too much time.

I have had a number of years of experience in the application and use of paints and varnishes, and each day I find something entirely new or different in the working qualities and application of them, as there are so many new methods and conditions changing as time rolls on. The average person seems to have but a vague idea of the trouble experienced in connection with the painting and finishing of any article, as the majority of people think paint is only paint and anyone can apply it. Many are not familiar with the ordinary trade names, as was the case of a hardware clerk, when a painter went into a hardware store and asked him if he had any drop black ground in Japan, and after looking over his stock, he said: "Well, we have not any ground in Japan but we have some ground in Montreal by the Canadian Paint Co." It may be true that anyone can apply paint or varnish, but the point is to have it applied so as to give a satisfactory finish both in appearance and wear. When I say a satisfactory finish they are big words, as there are so many different opinions as to what constitutes a finish. I will venture to say that if you were to ask the average manufacturer of autos, carriages, or railway cars, etc., whose product requires a high grade finish, what part of the factory caused him the greatest trouble and annoyance, he will invariably say the painting and finishing. It is a well known fact that paints and varnishes are very much like the human system, they are affected by the weather conditions, such as heat, cold, dampness, drafts, etc., and our climate during our shopping season is subject to changes and extreme conditions, any one of which may cause endless trouble to the painter.

Paints and varnishes are used very extensively on practically every article you can think of, from the steamship that plys the ocean, the railway train that covers the land, down to the bed you sleep on. Of course, they are used in some lines of manufacture more than in others. For instance, the electric manufacturers use them in quantities for insulating and impregnating of coils, armatures, transformers, tapes, and wires, and the carriage manufacturers in various ways for the finishing of their product. The railways use them for all their equipment and for various other purposes. My experience has taught me that each manufacturer has a special way of treating his particular goods, therefore it would be poor policy to employ the same methods to finish a carriage as you would a house, and you can readily understand why there is such a great variety of classes of painting.

Now that steel is becoming more extensively used two different systems of exterior car painting are necessary, one for the wood car and one for the steel; this principally applies to the preparation of the foundation and priming of first coats. One of the most essential principles in the finishing of wood cars is to see that the wood is properly seasoned, kiln dried and painted on the under side with a good oil paint, as the least particle of dampness will cause more or less trouble. After this has been done, the succeeding coats are simply a question of skill, the main point is to see that each coat is properly treated, until the car is finally completed. In the case of a steel car it is necessary to see that all grease smut and rust is sandblasted off the surface of the steel before applying the primer. After this is done, it is carried to completion in very much the same manner as the wood car, except that, if the steel is smooth, it does not require the same number of coats of paint, as the absorption is not as great as in the case of wood.

As every part of a coach is finished by various processes we will start with the top or roof. Before the application of a new canvas roof, it should be covered on the under side with a specially prepared canvas paint. This should be composed of raw oil, zinc, oxide, carbon black and dryers. The canvas should be applied while the undercoating is wet and allowed to dry on the car. The outside of the roof is handled in the same manner. The roof should have at least three coats, allowing 24 hours between each coat. When the exterior of the car has been prepared for painting, and after the priming coat has been applied, it is followed up with three or more coats of surfacer, which is very finely ground in Japan or varnish. The car is then decorated, after which two or more coats of wearing or finishing varnish are applied. The theory of the best experts is, that you must keep each coat, from the priming to the finishing varnish, as elastic as possible, so as to ensure durability, because elasticity means durability. This is especially true in painting steel coaches, as the metal contracts and expands according to weather conditions. The trucks and underframing of a car should be thoroughly cleaned and free from rust and grease, before the priming coat, after which the underframing is painted to prevent deterioration, the trucks are given one coat of enamel and one coat of finishing varnish. This constitutes in a very rough way the regular treatment of the exterior of a coach.

The interior finishing of a car varies, as there are many different kinds of wood used and each is usually treated according to its own peculiar nature. For instance, a different method is followed for maple than for oak, but the general method applies to all, such as the staining, filling and varnishing, rubbing and polishing. Some very interesting discussions can be had on the question of using a flat varnish for interior finish. Personally, I have had splendid results from the use of a varnish of this kind. Its wearing qualities are the same as high grade finishing varnishes and much time is saved by eliminating rubbing and polishing..

As the methods employed in car painting have changed considerably in the past 20 years, a comparison at that time with the present will no doubt prove interesting. Twenty years ago all passenger equipment was constructed of wood and the exterior painting was handled as follows: The 1st coat was known as the primer coat, which consumed four or five days in drying. This was composed of 75% white lead, 25% of pure raw linseed oil, and was prepared in paint shop. The 2nd coat was called oil lead coat, and dried in 24 hours, composed of 60% white lead, 15% raw linseed oil, 5% lamp black, 20% Japan dryers. The 3rd coat, known as flat lead coat, dried in 24 hours, and was composed of 75% white lead, 20% Japan dryer, 5% lamp black. We then glazed and puttied on this coat. Oil putty was used for nail holes only, and glaze used on sunken, uneven and bruised parts. This glaze was made from 75% white lead, 20% Japan dryers, 5% lamp black. This coat was then roughly sandpapered, after which followed four coats of rough stuff, applying two coats a day, the rough stuff was made from reno-fillers or mineral compositions mixed with oil, to give the best wearing qualities. Japan dryers were used for drying, and rubbing varnish was used as the fourth ingredient, which furnished a good rubbing surface. The next operation was known as the guide coat, made from 75% yellow ochre, 15% Japan dryers, 18% of benzine as a reducer. This coat dried in two hours. The next operation was the rubbing. This was done with black pumice stone and water, time allowed for rubbing from 12 to 18 hours, after which the car was sandpapered with very fine paper and allowed to dry for 24 hours. This constituted the preparing of the car for the color and varnish.

The 4th coat of color was ground in Japan and thinned with turpentine, with a small proportion of rubbing varnish, allowing 24 hours to dry. The 2nd coat was the same as the 1st coat. For the 3rd coat the color used was the same shade as used on the two first coats and mixed with rubbing varnish. For the 4th coat, the same color mixed with rubbing varnish, more varnish than color. This color and varnish body was then rubbed with pumice stone and water, thoroughly drenched off with clean water and wiped with a chamois. Car was then lettered and decorated and finished with one or two coats of wearing body varnish. This practice of painting kept a car in shops from 20 to 24 days. This gives a fair idea of the system practiced in previous years.

The practice, in vogue at present for exterior painting, both wood and steel, is about the same, except that a different mixture is used for the priming coat. The primer for wood should have more o The primer for steel should have more varnish. The following is the number of coats and time consumed in drying: First operation is known as the priming coat and dries in 48 hours. Second operation is known as surfacer or rough stuff and

dries in 24 hours. Third operation, same as second, except on the top of this coat, all nail holes are puttied with oil putty, all uneven parts and bruises are glazed with a glazing putty, allowing 24 hours to dry. Fourth operation: same method as the second, allowing 24 hours to dry. Fifth operation: The car is now ready for rubbing or sandpapering. It has been proven that as smooth a surface and much quicker results can now be obtained with sandpapering, instead of the old practice of rubbing with rubbing block and water, this is due to the use of more refined oils and quicker drying long oil varnishes and to the paint being ground much finer. Sixth operation: One coat of color, consisting of color ground in Japan, thinned with turpentine and a small proportion of varnish, allowing anywhere from 6 to 12 hours to dry. Seventh operation: same as sixth. Eighth operation, lettering and decorating. Ninth operation, a coat of railway body finishing varnish, allowing 48 hours to dry. This coat is the preserver for all paint underneath and should be of a good quality to insure durability. Tenth operation, second coat of railway body finishing varnish. This practice keeps car in shop from 16 to 18 days. Cars painted in this manner, after having been in service 12 to 15 months, are again shopped for varnishing. After the car has been thoroughly cleaned it is touched up, cut in with one coat of color, and is then given two coats of varnish.

In finishing of natural wood cars the operations are as follows: Before a sheathing is applied it is soaked in a vat of oil. First operation, one coat of paint, which is known as wood surface, composed of long oils and is very penetrating, allowing 48 hours to dry. Second operation: Sandpaper lightly, after which the car is dusted off and filled with a filler composed of silex whitening and oil and thinned with turpentine applied with a brush and wiped off with excelsior and waste, allowing 24 hours to dry. Third operation: One coat of wearing body varnish, allowing 48 hours to dry. Fourth operation: Sandpaper lightly with a very fine sandpaper and then letter and decorate. Fifth operation: One coat of wearing body varnish, allowing 48 hours to dry. Sixth operation, same as fifth.

Cars finished this way must be shopped at shorter intervals than painted cars, and this is not due entirely to the cracking or perishing of the varnish. For instance, when a car is painted, all joints especially those around battens and sills are sealed with paint, which prevents water getting to the under side of sheathing, causing what is known as water-logged sheathing. With varnish alone this could not be accomplished, and when only putty is used it finally shrinks and falls out, allowing water and dampness to penetrate the sheathing. Cars finished in this manner, after having been in service 12 months, and sometimes less, have to be shopped again for varnishing. When the car has been thoroughly cleaned, it is often found necessary to remove sheathing, on account of having become water-logged, due to insufficient protection from rain and dampness. When car is again ready for service it does not present a good appearance, due to contrast in color of old and new sheathing. From five to six years is about the average life of the exterior finish of a car finished in natural wood, while a painted car should run from six to nine years before the exterior finish has to be renewed. The expense of scraping and complete renewal of the exterior finish of a natural wood car is much greater than of a painted car.

The foregoing paper was read before the Canadian Railway Club in Montreal recently.

Curtailment of Railway Service in Great Britan.—It was announced in the British Parliament recently that commencing with Jan., 1917, the railway service would be curtailed, and fares increased 50%, to enable rolling stock to be released for war purposes. The new regulations will not apply to workmen's tickets, nor to commutation tickets for distances not exceeding 40 miles.

Cars for Coal Transportation in Western Canada.

The Board of Railway Commissioners passed general order 176, Dec. 26, as follows:—Re car shortage in the west for coal transportation, and the complaint of the Cardiff and Drumheller collieries complaining of the refusal of the Canadian Northern and the Grand Trunk Pacific Railways to supply cars for loading coal destined to points on other lines of railway. Upon investigating the complaints and the coal situation generally in the west, and the reports of the Board's Chief Operating Officer, it is ordered that all companies subject to the board's jurisdiction be required and directed, according to their respective powers and to the full extent that cars are available for the purpose, to supply cars for the movement of coal as and when required, not only to points on the originating line of railway, but also to points on other lines of railway. For all movements requiring transportation over more than one line, the company that enjoys the longer portion of the haul shall supply the cars, and in case such company is unable to supply the cars, then the other company, although only obtaining earnings for the movement over the shorter portion of the haul involved, shall supply the cars; but in such case shall be entitled to be paid by the company enjoying the longer haul a per diem charge of $1.25 for each and every car so supplied, instead of the usual per diem charge and any increases thereof that may be made less than the said sum of $1.25, the said charge to run from the time such cars leave until they are returned to the owning company's line. And it is further ordered that railway companies without sufficient equipment forthwith make the necessary changes in flat or live stock cars in order to provide for the present emergency and to enable them the better to carry out the provisions of this order. This order to be effective from Oct. 1 to Mar. 31 in each year.

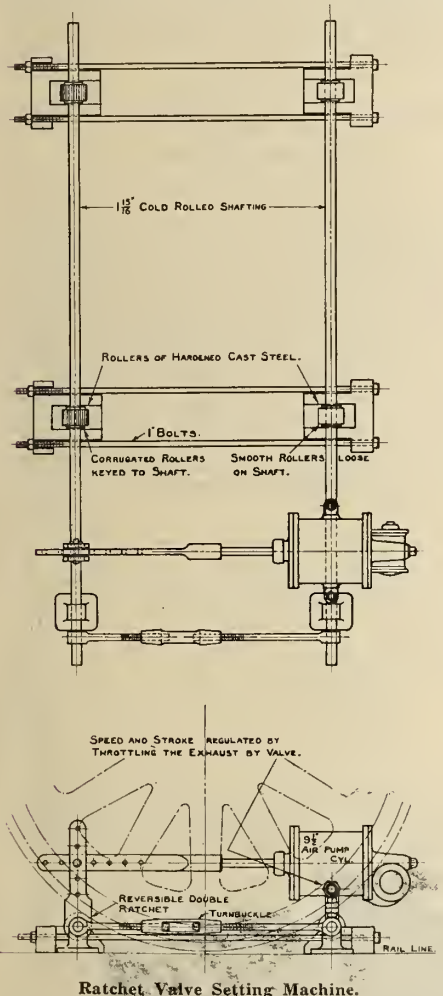
Bridge Pier at Port Nelson, Man.

This pier, consisting of a number of stone filled, cribwork piers and a series of steel spans, extends from the shore at the Hudson Bay Ry. terminus at Port Nelson to a handmade island, also of stone filled cribwork, which will be used as the loading and unloading berth for ocean steamships, as the water is not deep enough to allow them to approach nearer to shore. The photograph was taken in September, 1916. The above mentioned work was described as follows by D. W. McLachlan, Engineer in Charge, in a report to the Railways Department, May 6, 1915. "It has been found a most difficult matter to decide the design and form of the harbor works in the Nelson estuary, but after close observation and study it has been decided to build a cigar-shaped island near the natural channel of the estuary, and from this island to the end of the present works construct a bridge on piers, which, though unusually large, can be safely protected from ice action by the liberal use of riprap."

Railway Mechanical Methods and Devices.

Ratchet Valve Setting Machine, Canadian Pacific Railway.

After a locomotive has undergone general repairs there is necessity for the resetting and testing of the valves, for lap and lead, and so forth. This may be accomplished by coupling the locomotive to a live locomotive and noting the position of the points while the locomotive is being moved along the rails by the live locomotive. As this method is detrimental to the progress of any other work on locomotive which it may be desired to do at the same time, the advantages of the arrangement shown in the accompanying illustration will at once become apparent.

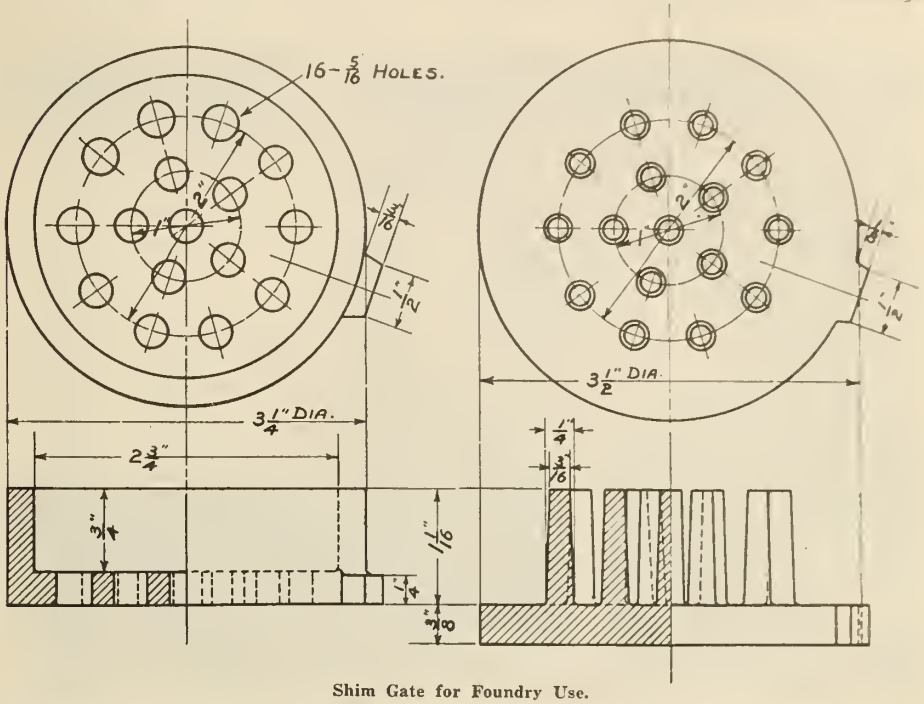

1 15/16" Cold Rolled Shafting
Rollers of Hardened Cast Steel.
1" Bolts.
Corrugated Rollers keyed to Shaft.
Smooth Rollers loose on Shaft.
Speed and Stroke regulated by Throttling the Exhaust by Valve.
9½" Air Pump Cyl.
Reversible Double Ratchet
Turnbuckle
Rail Line.

Ratchet Valve Setting Machine.

The shafts being placed across the rails, one on each side of the main driving wheel, the shoes (or bearing castings) and other attachments are then put in place as shown. The shafts are then drawn together by means of the four bolts and the turnbuckle, thus lifting the driving wheel a slight distance from the rails. The air pump is then connected to the ratchet. The machine has four rollers, two engaging the wheels on the ratchet shaft, the other two being idlers. The two engaging rollers are corrugated so that they bite on the wheel. These rollers are keyed to the shaft. The air pump drives the ratchet which revolves the shaft on which the keyed rollers are mounted, the speed of the air pump being regulated by the valve on exhaust pipe. By this method the drivers can be placed in any desired position, and as valves are usually marked before being taken down they can be replaced and adjusted without disturbing any other portion of the work. We are indebted to W. J. Brown, Foreman, tool room, C.P.R., Ogden, Alta., for the foregoing information and the drawing.

Shim Gate for Foundry Use, Canadian Northern Railway.

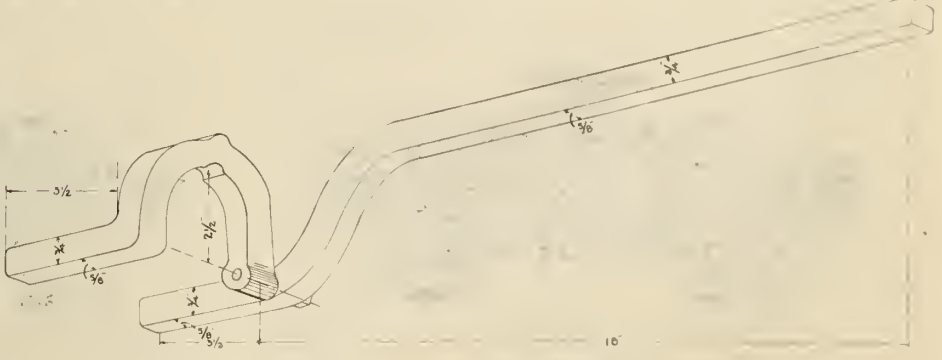
In every foundry difficulty is experienced in preventing slag from getting into the casting, and very often castings are lost in consequence. The accompanying illustration shows the core box for a metal strainer which is used in the Winnipeg shops, Canadian Northern Ry. This mould forms a core ¾ in. thick, which is perforated with sixteen 5/16 in. holes slightly tapered. The core is put into the sprue hole before the metal is poured and strains the metal, floating all slag to the top. Since this method has been used, not a casting has been lost in the shop through slag. The method is very simple, and a stock of core plugs can be kept on hand for different sizes of sprue holes. We are indebted for this information to L. Davidson, Foreman of Foundry, Winnipeg shops, C.N.R., who saw the device at a foundrymen's convention in the United States in 1915 and decided to try it. He says it is the best shim gate he knows of.



Shim Gate for Foundry Use.

Wrench for Uncoupling Steam Hose in Canadian Pacific Yards.

The dangerous practice of uncoupling steam hose on passenger cars with the hands is done away with by the use of a simple wrench, illustrated herewith, which is in use in the C.P.R. yards at Vancouver, B.C. The wrench is made of flat iron, 1¼ x ½ in. and is 25 in. long over all. In use, the coupler is gripped by the wrench, which is merely pressed on the coupler, thus forcing it apart. We are indebted to C. E. Gibbs, Foreman passenger car yard, Vancouver, for the foregoing information.



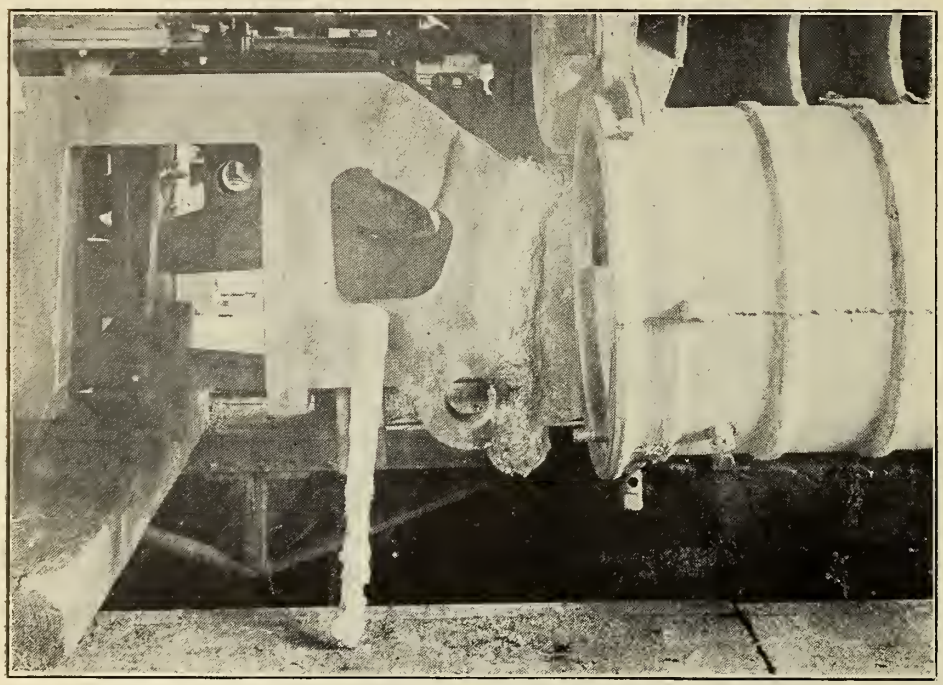
Wrench for Uncoupling Steam Hose.

Notes on Heavy Electric Railway Traction.—The article on this subject, by J .A. Shaw, General Electrical Engineer, C.P.R., published in Canadian Railway and Marine World for January, was a reproduction of a paper read before the Canadian Railway Club in December. Owing to an oversight this fact was not mentioned.

The C.P.R. Chateau Frontenac Hotel, Quebec, will be operated on the European plan from May 1. The minimum rates for rooms will be $2 without bath, and $3 with bath.

Thermit Welding on Canadian Pacific Railway.

The Thermit welding process applied to locomotive repair work has resulted in greatly lessening the cost of repairing broken frames, etc., and greatly reducing the time necessary to do the job, compared with the old method of welding in the blacksmith forge. The increasing weight of locomotives and the consequent increase in the size of the framework has rendered it almost impossible to weld them by the old method. The value of Thermit in cases of this kind is exemplified by a weld recently made on C.P.R. locomotive 3826 in the Vancouver shops. The frame was broken 2½ in. from the cylinder casting, the fracture being 28 in. long, with an average thickness of 5½ in.



Thermit Weld at Vancouver Shops, C.P.R.

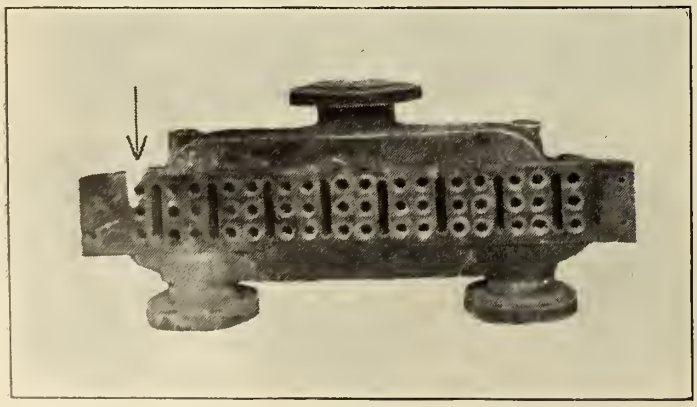
First the parts adjacent to the fracture were removed and 1 in. holes were drilled through the frame in line with the fracture, leaving a space about 1 in. inside. The opening was then widened by means of a jack to allow for contraction. The frame was then well cleaned of all grease for a short distance each side of the fracture. Beeswax, softened in hot water to the consistency of glaziers' putty, was then pressed into the opening, filling it entirely, also around the outside to provide reinforcement to the extent thought necessary, the amount of wax used being 9½ lb. The mould box was then placed in position, being 3 ft. 4 in. deep, 15 in. wide, and 3 ft. long, the length of the box being placed crosswise to the frame, the bottom of the box being about 5 in. below the frame. The moulding material, consisting of ground firebrick, fireclay, and moulding sand, was rammed in tightly, the pre-heating gate, pouring gate and riser patterns, which are made of wood, being placed in position as the work progressed. The wooden patterns were then carefully withdrawn. A stout piece of twine, previously embedded in the wax leading from the pre-heating gate to the riser was then withdrawn. The hole formed by the twine provides ventilation, which facilitates the melting of the wax. The crucible was then placed in position with a charge of 275 lb. of Thermit. The gasoline pre-heating torch was then applied to the pre-heating gate, which took 6½ hours to melt out the wax and bring the frame to good red heat. A small quantity of ignition powder was then added to the Thermit charge and the pre-heating gate plugged with an iron core, backed up by a quantity of moulding material. A white hot poker was then applied to the ignition powder, which started the ebullition of the Thermit. This was allowed to continue for from 30 to 40 seconds, when the crucible was tapped by knocking upward a small plug at the bottom of the crucible. The molten steel, at a temperature of 5,000 deg. Fahrenheit, ran down the pouring gate and filled up the space formed by the wax, any excess metal coming up through the space left by the riser pattern. The jack used to expand the frame was removed 2½ hours later, to provide for contraction. The job was left at this stage until the following morning. The mould box was then removed and the weld was found to be a success in every respect. The steel left in the riser and pouring gate was cut off by the acetylene flame. The parts of the locomotive which had been removed were placed in position and the locomotive was again ready for service.

We are indebted for the foregoing information to H. Cattell, leading blacksmith, who did the work under the supervision of F. C. Martin, Blacksmith Foreman, C.P.R., Vancouver, who has charge of the Thermit welding shop.

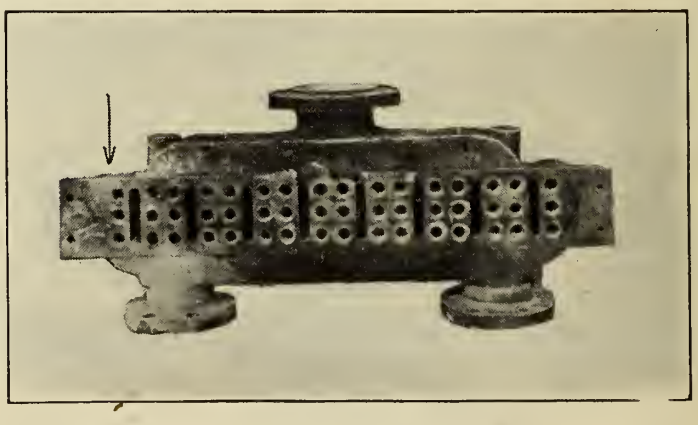
Welding Superheater Header, Grand Trunk Railway.

The accompanying illustrations show a superheater header before and after welding at the G.T.R. shops, Point St. Charles, Montreal. The crack was chamfered out and the surrounding metal cleaned. A charcoal fire was then built around the end to be welded, as it was not necessary to preheat the whole header. When the broken part was a cherry heat it was welded. The fire was then built up again and covered with ashes. When the casting was removed, the surrounding bridges were intact. The cost of making this weld was as follows:—

	Labor	Material.
1 man cutting out crack, 45 min. @ 40c an hr.	30c	
1 man welding, 1 hr	40c	
1 man preparing fire, etc., 30 min.	20c	
Oxygen, 60 cu. ft., @ $1.75 per 100 cu. ft.		$1.05
Acetylene, 48 cu. ft., @ $2.75 per 450 cu. ft.		.30
Iron, flux, charcoal		.75
	90c	$2.10
		.90
Total		$3.00



Superheater Header, Before Welding



Superheater Header, After Welding

We are indebted to W. D. Robb, Superintendent of Motive Power, G.T.R. for the above information and the photographs.

The Greater Winnipeg Water District put a new time schedule in operation on its railway Jan. 1. Eastbound trains leave the old Canadian Northern in St. Boniface Monday, Wednesday and Fridays at 8 a.m., instead of 7 a.m. and the westbound train leaves Waugh Tuesdays, Thursdays and Saturdays at 6 a.m.

Electric Locomotives for Mount Royal Tunnel.

The Canadian Northern Ry. has received 3 electric locomotives of the 6 ordered for its electrified zone, extending from the terminal station in Montreal through the Mount Royal tunnel to Cartierville. Following are the general dimensions:—

Length inside knuckles	37 ft. 4 in
Length over cab	31 ft. 0 in.
Overall height, pantograph down	15 ft. 6 in.
Height over cab	12 ft. 10 in.
Overall width	10 ft. 0 in.
Total wheel base	26 ft. 0 in.
Rigid wheel base	8 ft. 8 in.
Total weight, all on drivers	83 tons
Wheel diameter	46 in.
Tractive effort at 30% tractive co-effiient	49,800 lb.
Tractive effort at 30-hour rating	20,300 lb.
Tractive effort at continuous rating	14,500 lb.

They are for 2,400 volt d.c. operation, and have 4 axles with all the weight of the locomotive upon the driving wheels. The motors are nose-supported in the in the usual way and geared to the axle by twin gears. The running gear consists of two 4-wheel trucks, articulated together by a heavy hinge. The equalization of the trucks is accomplished by a semi-elliptic leaf spring over each journal box, connected through spring hangers to the frame and to the equalizer bars. The equivalent of a 3-point suspension is thus obtained through the side equalization of one of the trucks and both side and cross equalization of the other truck. The friction draft gear is mounted in the end frame casting of the truck. The cab, which is of the box type, is divided into 3 compartments, the centre one for the apparatus and the 2 end ones for the operator. Each operator's compartment is supplied with controller, control switches, ammeter, air brake and pantograph control, air gauges, 2,400 volt cab heater, bell rope and control for the whistle and sanders, thus providing the locomotive with complete double end control.

The motor equipment consists of 4 CGE-229A commutating pole motors, wound for 1,200 volts and insulated for 2,400 volts, two of them being permanently connected in series for operating on the 2,400 volt trolley circuit. The one-hour rating of each motor is 315 h.p. at 1,200 volts. The motors are designed for forced ventilation, which is obtained by a blower in the locomotive cab. Either pair of motors may be cut out, in case of emergency, by a special handle on the change-over switch. The locomotives are geared for a free runnning speed on tangent level track of approximately 45 m.p.h., and are operated as 2 speed machines with 10 points in series and 9 points in series-parallel. The master controller used is of the non-automatic type and has two handles, one regulating the applied voltage at the motors and the other for controlling the direction of rotation of the motors. The rheostats which form the external motor resistance are placed near the roof of the cab and provided with ample natural ventilation. The master controller and contactor energizing circuits are designed for 125 volts Each contactor is easily accessible without any disturbance to adjacent contactors. A special electro-pneumatic change-over switch is used for making the transition between series and series parallel connection of the pairs of motors. The 125 volt current for operating the contactors and for lighting the cab and headlights is obtained from a motor-generator set, the motor of which has two 1,200 volt windings and two 1,200 volt commutators in series for operation on 2,400 volts. This set is mounted in the centre cab and also drives the blower for providing forced ventilation to the main motors.

Fuses of the copper ribbon type, placed in fuse boxes, provide protection for each individual circuit, as well as the main circuit from the trolley. These fuse boxes are all arranged to blow into a common chamber, designed to take care of the arc. In addition to the fuse on the main circuit, a main switch is also provided. This is of the knife blade type, being opened and closed by a handle placed in a position for easy operation in case of emergency, or when it might be necessary to open the circuit while carrying current. This main switch blows into the chamber provided for the fuses, and has a powerful magnetic blowout.

The trolleys are of the slider pantograph type, pneumatically operated and mounted on insulated bases. Two pantographs are used per locomotive. A hand pump is provided in case a locomotive has been standing for some time and has no air supply. A speedometer, similar to the type largely used on automobiles, but especially designed for locomotives, is located in each operating cab. These are connected to the driving wheels of the locomotive by flexible shafts and gearing. A combined straight and automatic air brake equipment is provided on each locomotive, including a 2,400 volt motor driven air compressor, the set consisting of two 1,200 volt motors, operating in series on 2,400 volts and direct connected to an air compressor having a displacement of 100 cu. ft. of free air a minute. The approximate total weight of each locomotive is 83 tons. They are being supplied by Canadian General Electric Co., 2 of them having been built at that company's Peterborough, Ont., works and 4 at the General Electric Co.'s works, Erie, Pa., one having been delivered from the former place and two from the latter.

Canadian Government Railway Employes and National Service.

Early in January the following circular was addressed to all C.G.R. officers and employes, with the approval of the Minister of Railways:—"To assist the National Service, first, in taking an inventory of the man-power of the nation by having the cards which are being distributed properly filled in; and, second, to assist the National Service in the work undertaken, the management desires that all officers and employes within the age limits referred to on the card fill in their answers promptly and correctly and return same to the Director General of National Service, Ottawa.

"With reference to questions 23 and 24, the management will undertake to give leave of absence in cases where such is desirable, and will undertake through the Provident Fund Board to protect the standing of such officers and employes as 'employes' within the meaning of the Provident Fund Act during the leave of absence period."

E. J. Chamberlin, President, G.T.R. and G.T.P.R., telegraphed the following message to every station on the system Dec. 31:—"In thanking all officers and employes of the company on behalf of myself and the board of directors for their loyal and efficient service during the year just closing, I desire to extend to each and every one my best wishes for the health and happiness of themselves and families during the ensuing year, and to solicit the co-operation of every employe in making the G.T.R. and its service to the public during 1917 superior to any railway on the continent."

Travellers Shop on Trains.—The Canadian Northern Ry. has established on its trains between Toronto and the Pacific Coast, a travellers' shop, in charge of the observation car porter, the stock containing a wide range of articles, from shoe laces and collar buttons to smelling salts and bon-bons.

The Canadian Pacific Railway's Honor Roll No. 16.

Averill, William	Wheel borer	West Toronto	Killed in action
Bennett, Charles W.	Porter	Regina	Suffering from shock
Bigland, Richard K.	Cook	Montreal	Died of wounds
Blundell, William D.	Clerk	Montreal	Killed in action
Brightman, Reginald G.	Ticket Clerk	Fort William	Wounded
Bryson, William	Machinist's apprentice	Angus	Wounded
Copeland, Thomas	Locomotive fireman	Revelstoke	Wounded
Crowther, Othello W.	Pipe fitter's helper	Winnipeg	Wounded
Dickson, William	Cleaner	Winnipeg	Killed in action
Ellis, James G. St. J.	Assistant Engineer	Kentvillle	Killed in action
Fletcher, Thomas	Painter	Fort William	Wounded
Gordon, Alexander	Locomotive fireman	Victoria	Killed in action
Haselgrove, Arthur W.	Electrician's helper	Angus	Killed in action
Kenna, Robert	Clerk	Montreal	Killed in action
McCallum, Rupert	Laborer	Outremont	Killed in action
McDonald, Malcolm	Waiter	s.s. Kootenay	Wounded
Mawdsley, Herbert	Shed foreman	Kamloops	Killed in action
Nase, William B.	Locomotive engineer	Fort William	Wounded
Naylor, James	Car repairer	Assiniboia	Suffering from shock
Ratcliffe, Frank J.	Machinist's apprentice	Angus	Concussion
Sawkins, Ernest H.	Wiper	Kneora	Wounded
Sinclair, Daniel G.	Car inspector	Sortin	Killed in action
Speirs, Alexander	Brakeman	Winnipeg	Suffering from shock
Spence, William T.	Locomotive fireman	London, Ont.	Killed in action
Staples, Frederick W.	Steward	s.s. Princess Charlotte	Wounded
Stirling, John B.	Carpenter	Medicine Hat	Suffering from shock
Tait, Mortimer	Clerk	Victoria	Wounded
Wark, Arthur Goodwin	Brakeman	Kenora	Wounded
Wilkinson, Jesse	Painter and varnisher	Angus	Wounded
Wills, Sydney Charles	Car cleaner	Glen Yard	Wounded
Wright, Harry	Waiter	Montreal	Wounded

Reduction of Passenger Train Service to Relieve Freight Congestion.

The following judgment was given Jan. 8, by the Chief Railway Commissioner, Sir Henry Drayton, and concurred in by the Assistant Chief Commissioner, D'Arcy Scott, and Commissioners McLean and Goodeve: The matter of traffic congestion has been anxiously considered for some time past. In so far as the fact of congestion is concerned, there is no room for doubt. Coal and coke shipments have been delayed to a serious and in some instances, to an alarming extent; the proper supply of raw materials to munition factories has been interrupted, and the movement of grain from the northwest, which is much required not only by the grain producing territory in the west but as well by the consuming eastern centres, to say nothing at all of the overseas demands which must be met, has been interfered with. The grain movement from the west has been limited to some extent by the movement into and out of the eastern territory and storage facilities therein, and has also in no small measure been injuriously affected by a shortage of box cars and by a shortage of men, and to a lesser extent of locomotive power.

The causes of congestion are not altogether a railway failure, but include an irregular loading movement overseas, resulting in an uncertainty in the railway movement and consequent congestion of traffic of itself in excess of the traffic ordinarily offered on Canadian lines. Over and above all this, the situation is rendered the more acute by reason of the fact that, owing to the financial and traffic conditions obtaining in 1914, and for a portion of 1915, the railway companies had not ordered equipment, which has now become necessary, and later were unable to get it, speaking generally, except at largely increased prices on deliveries at an early date. Again, over and above all this, the congestion became more marked, in the first instance, on the lines in United States territory, with the result that traffic which otherwise would have been routed on U. S. lines was routed via Canadian lines and offered in large quantities before protective embargoes went into force. The result is a traffic congestion at all points at the border, both on the Canadian and U. S. sides, and at a large number of the divisional points and at all large terminals.

The imperative duty of the Board is to see, in the first instance, that this country fails in no regard in supplying materials necessary in the prosecution of the war. This, of course, means that the transportation required by the Imperial Munitions Board, from the different factories producing munitions or materials required by the Empire and its allies, must be properly and efficiently supplied. It also means that the full movement of grain and flour required both by Great Britain and by the allied nations be fully and completely maintained. In like manner, it is the duty of the Board to see that the freight movement of the necessities of life for our own people, and raw material required for our export trade, on which depends so much in the matter of exchange and the financial standing of the country, is now allowed to suffer. The Board has done everything possible to expedite the movement of these commodities, with the equipment and competent men now available for freight service. No more can at the moment be done in this direction, the railways are using every man available and every locomotive fit to use owned by the companies or which they have been able to rent for this purpose.

The question now that the Board has to decide is as to whether the movement already referred to as being so necessary should continue to suffer, or whether, on the other hand, locomotives and men now used in passenger business ought to be released and put into freight service. In my opinion, there is no room for doubt as to what ought to be done. Convenience and comfort on the one hand must be sacrificed to necessity on the other. The companies have been advised that the freight movement must be increased and the passenger movement curtailed to the full extent that that movement can be curtailed and the necessary communication between different districts maintained. Circulars 138 and 139 issued by the Board, requiring 10 days notice to the Board and to the public of changes in passenger service will be suspended until further order. It is necessary that this should be done, in view of the direction to the railway companies to forthwith cut off all unnecessary passenger movement and to increase the facilities of the freight service.

It is quite true that not all of the passenger locomotives can be effectively used in freight service, but many of them can, however; and, apart from the question of locomotives, the crews will become ava able, and the supply of railway men, competent and efficient, directly increased in the proportion that the passenger service is reduced. Over and above all this, in the public interest, in view of the coal shortage existing, the large quantity of coal consumed in passenger service ought to be curtailed as much as possible. More effective service can be given in the companies' mechanical and locomotive shops, and the freight equipment be better maintained and made more efficient than it is today, with a reduced passenger service. There will also be more room in the yards and a more free and expeditious movement of freight trains will become possible.

In my view, the Board cannot well at the present moment order the companies to remove any specific trains. The details of the different passenger movements are much more familiar to the companies than they are to the Board, and in the reductions that must be made the companies will have to see that every section of the country at least has the necessary passenger movement both in and out, although this may mean the carrying on of some trains not of themselves remunerative and the cancellation of trains which may be remunerative to the companies. The chief congestion is to be found at the frontier and on the section between Hamilton and Toronto. Three companies are directly interested in the passenger movement there—the Grand Trunk, Canadian Pacific, and Toronto, Hamilton & Buffalo Railways. The territory is one requiring, undoubtedly, a good passenger service. Probably each and every company will be able to show that every train operated in this district is operated at a profit. It is, however, absolutely necessary that at this, the most congested point, the companies must lose their passenger revenue and the public be inconvenienced, until the present emergency is past. There are now 40 trains operated daily over the territory, that is, 20 into and 20 out of Toronto. In view of these circumstances, a radical cut in this service must immediately go into effect. This district must be supplied with coal and raw material, not only owing to its own necessities, but also owing to the fact that in it are situated a large number of munition factories now in danger of being closed. In my view, direction ought to be given immediately that out of these 40 trains, 16 must be cancelled, the companies to select out of the total those trains which can be cancelled with the least possible public inconvenience. The mere factor of company revenue cannot be made a controlling factor. After a careful review of the situation, I am further of the opinion that the Canadian Pacific ought to and can rearrange its service so that a saving can be made of some 26 locomotives and crews, the Grand Trunk 35, and the Canadian Northern 12.

The reductions which are now proposed in the passenger service, entailing as they do a considerable loss of passenger revenue, in some cases, to the companies, and inconvenience to the general public, are merely tentative. As and when the congestion from which the country is now suffering, and which probably will continue to a greater or less degree until the opening of navigation, is removed, the service must be restored. All companies must use all suitable equipment and men released from the passenger service for the transportation of freight.

Particulars of the reductions and changes in passenger train service which have been made in consequence of the foregoing judgment are given on a later page of this issue.

Track Elevation at Spokane, Wash., by the Northern Pacific Ry. will extend for 2 miles through the city. The tracks will be raised 12 to 16 ft., and carried on solid fill between concrete retaining walls, with about 20 bridges over the streets. The passenger station is involved in the change. There are 12 to 15 tracks at some parts of the line, and the width of the roadbed will be from 85 to 225 ft. The work will be done without interrupting traffic, which amounts to about 40 regular trains daily. The plan is to build the north wall and then a trestle along the north side from which a fill will be made wide enough for two main tracks. Traffic will then be diverted to these tracks, and the filling continued to the south wall.

American Railway Engineering Association.—The following have been nominated for officers for the ensuing year: J. G. Sullivan, Chief Engineer, Western Lines, C.P.R. for President; Earl Stimson, Engineer, Maintenance of Way, Baltimore & Ohio Rd., for Vice President; G. H. Biemner for Treasurer; and E. H. Fritch for Secretary. Ten members have been named for the nominating committee, from which five are to be selected. Among them is J. R. W. Ambrose, Chief Engineer, Toronto Terminals Ry. Co. The elections take place in March.

Reduced Railway Service in Great Britain.—With the New Year some 400 passenger trains disappeared from the British railway time tables. Many of the remaining trains run more slowly and with a larger number of stops. Long distance non-stop expresses are now as rare as they were 30 years ago. The London Daily News says that, so far, as comfort and speed are concerned, the clock has been put back a quarter of a century. Fares have been advanced 50%.

W. F. Tye on Canada's Railway Problem and Its Solution.

W. F. Tye, M.Can.Soc.C.E., consulting engineer, Montreal, formerly Chief Engineer, C.P.R., read a paper on the above mentioned subject before the Canadian Society of Civil Engineers in Montreal, Jan. 17. He dealt exhaustively with the location, cost of construction and results of operation of the Canadian Pacific, Grand Trunk, Intercolonial, Canadian Northern, National Transcontinental and Grand Trunk Pacific, and gave the following as his conclusions and as recommendations:

The National Transcontinental, the Grand Trunk Pacific and the Canadian Northern railways are unable to earn their operating expenses and their fixed charges. Canada has built, and is operating, the first of these roads, and Canada and the various provinces have guaranteed the principal and interest of most of the bonds of the other two. As the roads are unable to earn their fixed charges, these must, of necessity, be paid by the country. The failure of these roads is due to the duplication of lines by all the railways, encouraged and bonussed by the government; to the excessive cost of the Grand Trunk Pacific and National Transcontinental Railways; to the failure of the Grand Trunk Pacific to provide itself with an adequate system of feeders in the west, and to the construction, by the Canadian Northern, of the long and unproductive stretches of road across British Columbia and Northern Ontario, without feeders, terminals, etc.

If the Canadian Northern, the Grand Trunk Pacific and National Transcontinental be maintained in two separate systems, it will cost at least $400,000,000 to build the necessary branch line feeders and terminals, to provide them with adequate rolling stock, and put them in proper physical condition to compete with the Canadian Pacific. It will be necessary that the Grand Trunk Pacific build 5,000 to 6,000 miles of feeders in the west. It will be necessary that the Canadian Northern build 2,000 to 3,000 miles of feeders in the east, and terminals, costing many millions, in Montreal, Toronto, Ottawa, Quebec and Vancouver.

Canada has already sufficient railway mileage for years to come. The additional mileage necessary for these roads could only be had by duplicating existing lines. Such duplication of lines would only add to the burden to be borne by Canada in the way of subsidies, guarantees, etc., without doing the country any good. Canada has sufficient railway mileage and traffic for two good transcontinental systems, the Canadian Pacific and another, but not enough for three.

A consolidation of the Grand Trunk, the Grand Trunk Pacific, National Transcontinental and Canadian Northern Railways would give a well balanced system. The Grand Trunk has an excellent system in the east, with terminals in all large and important centres; the Canadian Northern has not. Each is strong where the other is weak. Combining them must, of necessity, be the most economical and efficient way of handling the situation. Such a combination would not require more than $100,000,000 to provide it with sufficient rolling stock, and to put it in proper physical condition to compete with the Canadian Pacific. The saving in capital cost would be at least $300,000,000 and, at present rates of interest, the saving in fixed charges at least $15,000,000 a year.

The National Transcontinental cost $100,000 a mile to build. The parallel Canadian Northern cost less than $50,000 a mile, and is, in every way, as efficient an instrument of transportation. The Quebec Bridge, with approaches, will cost $40,000,000, and will not be necessary for many long years to come. The National Transcontinental, including the Quebec Bridge, has cost Canada at least $100,000,000 more to build than it would have cost the Canadian Pacific to build as efficient a road.

Including operating expenses and fixed charges, it costs the Canadian Pacific about $70 to do $100 worth of business. Including operating expenses and interest on cost, it costs the Intercolonial and the other Canadian Government roads from $200 to $220 to do $100 worth of business.

Canada should follow the wise example set by Sir John Macdonald, when dealing with the Canadian Pacific in 1879-80, and form a new private corporation, with sufficient power and the necessary safeguards, to take over and consolidate the Grand Trunk, Grand Trunk Pacific, National Transcontinental and Canadian Northern Railways, and develop another Canadian Pacific, rather than to have the Government take them over and develop another and a vaster and more expensive Intercolonial. Conditions for the formation of such a company are much more favorable than they were in 1880, as Western Canada had not then been proved, as it since has been, to be capable of supporting a large and prosperous population. Such a combination would start with gross earnings of at least $100,000,000 a year, with a probable average increase of 8% a year, and probable net earnings of from $25,000,000 to $30,000,000 a year, and a net revenue from other sources of about $2,800,000. Its fixed charges at consolidation would be about $35,000,000, and it would be under the necessity of spending in the first five to seven years at least $100,000,000 to provide rolling stock and to put its properties in good physical condition. Deficits for some time to come would be inevitable owing to the heavy fixed charges, amounting to about $35,000,000, as compared with $10,300,000 a year for the Canadian Pacific. As these high fixed charges are caused by the excessive cost of government construction, and by duplication of lines, bonussed and guaranteed by the government, Canada must pay them. The fixed charges would be at least $15,000,000 less with one private system than with two, and very much less with private than with government management. With such a combination as has been outlined the series of deficits should not last more than five to ten years, after which the road should be very successful.

In order to control its policy and to share in its certain prosperity, Canada should have an interest in the new company. The Dominion Government should furnish 40% of the money required, own 40% of the stock, and appoint 40 of the directorate, but take no part in the actual management. This would give all the advantage of government control without any of the manifest disadvantages of government management. Once this combination was successful, Canada should once and for all abandon the vicious policy of bonussing railway construction, either by gifts of money or land, or by the still more vicious policy of guaranteeing the bonds of railway companies of which it has no direct control.

Passenger Rate Meetings at Quebec.

The usual January passenger association meetings were held this year at Quebec, on Jan. 9, 10, and 11. The usual routine business was transacted by the Niagara Frontier Summer Rate Committee and the Great Lakes and St. Lawrence River Rate Committee, the rate clerks meeting first and preparing schedules for submission to the committee meetings. G. C. Wells, Assistant to Passenger Traffic Manager, C.P.R., was elected chairman, Niagara Falls Summer Rate Committee; and J. F. Condon, G.P.A., Great Lakes Transit Co., Buffalo, N.Y. was elected chairman, Great Lakes and St. Lawrence River Rate Committee; James Morrison, A.G.P.A., Canadian Northern Ry., Montreal, being permanent secretary of both committees. G. C. Howard, A.G.P.A., New York Central Rd., retiring President, Niagara Frontier Summer Rate Committee, was presented with a gavel, the wood in which was taken from a hat rack used at one time by Commodore Vanderbilt in his private office in the old Grand Central Station, New York.

The International Water Lines Passenger Association dealt with the following subjects, which had been referred by the American Association of Passenger Traffic Officers: Telegraphic code applicable for use in passenger traffic department; association ticket paper; revised interline ticket; printing of folders and economical distribution of same; economy in operation of city ticket offices; definition of division terms; practical maps in Official Guide, and folders clearly distinguishing the line or system from its connections. Most of the lines on the Great Lakes gave notice of raising their rates from 10 to 15%, but the Canada Steamship Lines, Ltd., announced that it would not advance rates on the St. Lawrence-Saguenay route. The following officers were elected: President, E. W. Holton, G.P.A., Northern Navigation Co., Sarnia, Ont.; Vice President, M. J. Powers, G.P.A., Champlain Transportation Co., Albany, N.Y.; Secretary-Treasurer, M. R. Nelson, Northern Steamship Co., Buffalo, N.Y. The retiring President, F. B. Hibbard, G.P.A., Hudson River Day Line, New York, was presented with a gavel, the wood in which was taken from the wreck of the schooner Royal Savage, Benedict Arnold's flag ship, which was sunk at the south end of Valcour Island, Lake Champlain, Oct. 11, 1776.

The Quebec Ry., Light & Power Co. gave the officials attending the meeting a trip to St. Anne de Beaupre and a luncheon at the Kent House, Montmorency Falls. The next meetings of the three associations will be held at Buffalo, N.Y., in January, 1918.

Railway Lands Patented.—Letters patent were issued during Dec., 1916, respecting Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres.
Alberta & Great Waterways Ry.	5.85
Calgary & Edmonton Ry.	1,128.0
Canadian Northern Ry.	3,338.58
Canadian Pacific Ry.	[illegible]
Grand Trunk Pacific Ry.	[illegible]
Grand Trunk Pacific Branch Lines Co.	[illegible]
Manitoba & South Eastern Ry.	[illegible]
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.	[illegible]
Winnipeg River Ry.	[illegible]
Total	[illegible]

Railway Development, Projected Lines, Surveys, Construction Betterments, Etc.

Alberta & Great Waterways Ry.—Tracklaying on the extension to McMurray was reported to be in progress during January, only 45 miles having been laid out of the 125.5 which it was hoped to have laid by the end of 1916. J. D. McArthur, President, is reported to have stated that unless some unforeseen obstacle occurred rails will be laid to Fort McMurray by Mar. 31. Ballasting of the newly laid mileage will be fully completed this year, and the station and other buildings will be erected.

We are officially advised that the company's Egg Lake branch starts at Dewar, mileage 101.4, and runs southeasterly to the provincial boundary, about 80 miles. A preliminary survey has been made for the entire distance and a location survey has been completed to mileage 50. Up to the end of 1916 grading had been completed for 11 miles and track had been laid thereon. (Jan., pg. 19.)

Athabasca Valley Ry.—The Alberta Legislature is being asked to extend the time for the building of this projected railway from near Independence, on the Edmonton, Dunvegan & British Columbia Ry., to Fort Assiniboine, Alta. J. D. McArthur, President, E.D. & B.C.R. and its associated lines, the Alberta & Great Waterways Ry. and the Central Canada Ry., is primarily interested. (Oct., 1914, pg. 468.)

Brule Lake Ry.—The Alberta Legislature is being asked to extend the time for the building of this projected railway from mileage 994 on the G. T. Pacific Ry., near the east shore of Brule Lake, southeasterly through Secs. 26 and 24, Tp. 49, Range 27, west of 5th Meridian, thence north easterly through Secs. 19, 20 and 29, Tp. 49, Range 26, west of 5th Meridian. (May, 1915, pg. 170.)

Calgary & Fernie Ry.—The Dominion Parliament is being asked to extend the time for the building of this projected railway between Calgary, Alta., and Fernie, B.C. Hough, Campbell & Ferguson, Winnipeg, are solicitors for applicants. (May, 1915, pg. 170.)

Canadian Pacific Ry.—The gap between Altawan, the western end of track on the Weyburn-Lethbridge line, and Manyberries, the eastern end of track from Sterling, Alta., is a little over 20 miles. It is expected that construction will be gone on with this year so as to have the line completed through.

A press report states that the yards at Raymond, Alta., are to be enlarged, and that work will be started early in the spring.

In our last issue it was stated that a contract for the extension of Pier D, at the foot of Grenville St., Vancouver, had been let to S. E. Jenkins & Co. The firm is Sydney E. Junkins & Co. A contract is reported to have been let to Vancouver Creosoting Co. for the piles required for the extension of this pier. The estimated cost of the piles required is put at $150,000. A large number of them will be 130 ft. long. (Jan., pg. 25.)

Canadian Western Ry.—The Dominion Parliament is being asked to extend the time for the building of this projected railway from the International Boundary through Pincher Creek and Cowley and along the Old Man River to Livingstone Mountain, and thence to Calgary, Alta., with a branch to Michel, B.C. Hough, Campbell & Ferguson, Winnipeg, are solicitors for applicants. (May, 1915, pg. 170.)

Caribou, Barkerville & Willow River Ry.—The Dominion Parliament is being asked to extend the time for building this projected railway from near Eagle Lake, on the G. T. Pacific Ry., and along the watershed of the Willow River to the Cariboo Road at Barkerville, B.C.; a line from Barkerville to the junction of the Clearwater and North Thompson Rivers; and from 17 miles from the northerly terminus easterly to Bear River, 20 miles, and to increase its capital stock from $1,000,000 to $10,000,000. Pringle & Guthrie, Ottawa, are solicitors for applicants.

In Apr., 1915, the Minister of Railways approved of route map of the railway from Barkerville towards Willow River, 170 miles. (May, 1915, pg. 170.)

Central Canada Saskatchewan Ry.—The Saskatchewan Legislature is being asked to incorporate a company with this title to build a railway from Tps. 61, 62 or 63 on the western boundary of the Province easterly to Tp. 61 or 62, Range 8 or 9, w. 3rd meridian, thence southerly and easterly to Prince Albert. Anderson, Bagshaw, McNiven & Fraser, Regina, Sask., are solicitors for applicants. (See Ceneral Canada Ry., Feb., 1915, pg. 106.)

Central Canada Ry.—The Alberta Legislature is being asked to authorize the company to build the following additional lines: An extension of the line authorized by chap. 46, 1913, from Tp. 81, Range 4, west of 6th Meridian, westerly to the western boundary of the Province; to extend the same line northerly to the northern boundary of the Province, approximately parallel with Hay River; a branch line from Tp. 74, Range 17, west of 5th Meridian, near High Prairie, southerly to Snipe Lake, thence westerly to 6th Meridian; and a line from near Edmonton to Calgary. The line authorized to be built in 1913 was to start from Tp. 74 or 75, Range 18 or 19, west of 5th Meridian, to Peace River Landing, thence to Tp. 86, Range 4, west of 6th Meridian, with a branch from Peace River Landing northerly to the Brule River, near Tp. 94, Range 22, west of 5th Meridian. (May, 1916, pg. 106.)

Edmonton & Southwestern Ry.—An Edmonton, Alta., press report states that a contract has been let for making the preliminary location surveys for this railway and that the work will be started forthwith. The railway is projected in connection with a power development proposition at Blue Rapids, on the Saskatchewan River. The railway will have an approximate length of 70 miles along the power line. (May, 1916, pg. 183.)

Edmonton, Dunvegan & British Columbia Ry.—J. D. McArthur, President, is reported to have stated recently that during this year the work to be done will include the completion of the ballasting of the last 17 miles of the main line to Spirit River; the completion of the ballasting on the Grand Prairie Branch, and the completion of the line from Spirit River to Pouce Coupe. The rails for this extension have been purchased in the U.S., and will be laid as early in the spring as weather conditions warrant. This line will be ballasted and put in operation early in the autumn.

Tenders are under consideration for the erection of a steel bridge across the Peace River. It will have a total length of 1,600 ft., and will be 80 ft. above high water mark. The substructure will consist of 5 piers in deep water, 4 in shallow water, with concrete approaches, which will require about 10,000 cu. yds. of concrete. The superstructure will consist of 7 200 ft. deck truss spans and 1 225 ft. through span, with girder approaches on either side. As soon as the bridge is completed, construction will probably be started on the extension of the line towards the Waterhole district.

A survey is reported to have been made for a line from Busby, mileage 34.7 from Edmonton, on the E.D. & B.C.R., to Fort Assiniboine, about 70 miles. (Jan., pg. 19.)

Essex Terminal Ry.—The Dominion Parliament is being asked to authorize the building of a branch line from the existing line near Ojibway to Pelton, Ont., seven miles. J. H. Coburn, Walkerville, Ont., is Secretary. (Jan., pg. 19.)

The Grand Trunk Ry., on Jan. 10, took out a permit for the reconstruction of its freight sheds at the Ferguson Ave. yards, Hamilton, Ont., which were practically destroyed by fire, Jan. 7. The work is estimated to cost $30,000. The property destroyed included the greater part of the freight sheds, the freight offices on Barton St., a number of empty and loaded box cars, together with a large quantity of package freight, the total loss being estimated at approximately $100,000. (Jan., pg. 19.)

The Grand Trunk Pacific Ry. Co. is asking the Dominion Parliament to extend the time within which it may build branch lines generally. This covers branch lines mentioned in chap. 99 of the statutes of 1906; an additional line authorized by chap. 86 of the statutes of 1909; nine further branch lines authorized by chap. 103 of the statutes of 1910, and 12 additional lines authorized by chap. 83 of the statutes of 1911.

A second application asks the Dominion Parliament to extend the time for the completion of the following branch lines: From Tp. 22, Range 6, west of 2nd Meridian, to Yorkton and on to Hudson Bay, in the vicinity of Fort Churchill; from between longitude 105 and 107 to Prince Albert, Sask.; from between the east limit of Range 11 and the west limit of Range 16, west of 3rd Meridian, southwesterly and westerly to the vicinity of Calgary, or to a point on another line authorized to be built to Calgary; from a point on the last mentioned line between Range 20 and the west limit of Range 28, west of 3rd Meridian, easterly and southeasterly to Moose Jaw, Sask.; from Tps. 41, 42 or 43 on the line from Oban to Battleford, Sask., northwesterly and northerly to the main line between Arland and Wainwright, Sask. The first of these lines has been built and is in operation from Melville through Yorkton to Canora, 56 miles; the second is in operation from Young to St. Louis, 89 miles, and the grading is completed and ready for track laying into Prince Albert, 24.26 miles; the third is in operation from Biggar to Loverna, 105 miles; no work has been done on the fourth, while on the fifth a train service is being operated from Oban through Battleford to Carruthers, 104 miles. (Nov., 1916, pg. 447.)

Great Northern Ry.—Considerable progress has been made with the long cut from the Burnaby border through the North Road to the G.N.R. tracks on Brunette Creek. The cutting is about 1,400 ft. long, and averages 50 ft. in depth, and will be wide enough to permit of the laying of a double track to conform with the rest of the line into Vancouver. Two 16

car trains are run daily between the cutting to the False Creek terminals, where the material taken out is used for filling. The cut is expected to be completed in April, when a concrete and steel bridge will be erected across the North Road. The contractors are A. Guthrie & Co., Vancouver.

The Vancouver City Council has issued a permit for the erection of the proposed freight sheds on the False Creek terminal site, the work to be carried out by Grant Smith & MacDonnell, under the supervision of F. L. Townley, the company's architect. (Jan., pg. 19.)

Grenville, Harrington & Northern Ry.—The Quebec Legislature has incorporated a company with this title to build a railway from Grenville along the valley of the Rouge River, to Harrington East, thence northerly in Argenteuil County. (Jan., pg. 19.)

Kenora & English River Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a line from the National Transcontinental Ry. west of Superior Jct., Kenora District, Ont., northerly and westerly, crossing the English River west of Lac Seul, northerly and westerly through Patricia District and westerly and southerly to Winnipeg. Denton, Grover & Field, Toronto, are solicitors for applicants.

Lynn Creek, B.C.—The North Vancouver, B.C., City Council has before it questions concerning development along Lynn Creek Valley from which it draws its water supply. M. P. Cotton claims to have the right to remove timber from the valley, and desires to build a logging railway along the shore of the creek to enable him to get out the logs and to aid in the development of a zinc mine. North Vancouver is interested in the conservation of its water supply, and Mr. Cotton in the development of his property. The matter is still under discussion.

Pacific Great Eastern Ry.—The British Columbia Government on Jan. 8 authorized the issue of a treasury note for $500,000 to carry on construction work on the line. This will, it is estimated, pay for material used and the actual cost of labor employed until the end of March. The work to be done under this order in council will consist of the continuance of track laying from Clinton towards Prince George and the finishing up of the grading between those two points. This work will be done entirely under the supervision of the government engineers.

Since the new B.C. Government took office the company appears to have been given very considerable attention. An order in council was passed, Jan. 8, authorizing the employment of accountants to make an audit of the company's books as the basis of a thorough consideration of the whole situation of the province's relationship to the company. It is expected that the Premier will make a statement as to the future of the company soon after the Legislature meets in February. (Jan., pg. 20.)

Prince Edward Island Car Ferry.—We are officially advised that the car ferry terminal pier, etc., at Port Borden, P.E.I., is not yet fully completed. The railway track connection with the P.E.I.R. has been completed, the track having been laid from the yard, where it had been laid in 1914, for a further distance of a mile on to the pier. (Dec., 1916, pg. 484.)

Quebec Bridge.—It was reported, Jan. 15, that such progress has been made with the manufacture of the steel for the suspension member of the Quebec Bridge, that the contractors expect to have it ready for placing in position in September. The member is being built on the same plan as was the span which collapsed in Sept., 1916, and it will be floated into position on practically the same lines as that span was. (Nov., 1916, pg. 446.)

The Roberval - Saguenay Ry.'s main line runs from Ha Ha Jct., on the Quebec & Lake St. John Ry., to Bagotville, 20 miles, with a branch from Laterriere Jct. to Lake Kenogami, 12 miles, and a second branch from Labrosse Jct. to Chicoutimi Ouest, 3.4 miles, a total of 35.4 miles. The last mentioned branch is being operated by electricity, and it is proposed to electrify the company's yards at Port Alfred. The uncompleted portion of the main line has been surveyed from Ha Ha Jct., through the townships north and west of Lake St. John, to Roberval. The company's rolling stock consists of 2 electric locomotives, 4 passenger cars, 10 box cars, 168 flat cars and 2 cabooses. (Jan., pg. 20.)

St. John & Quebec Ry.—Chief Justice McKeown has before him in the New Brunswick Supreme Court, arbitration proceedings in the case of A. R. Gould and associates against the Provinces of New Brunswick, arising out of the expropriation by the Province of the St. John & Quebec Ry., under the provisions of a statute of 1915. The plaintiffs at that time owned all the company's capital stock, and had expended about $4,500,000 upon the construction of 120.3 miles of railway from Centreville to Gagetown, N.B. The amount of the claim, $334,200, is based on a percentage of the cost of the line built and on the estimated value of the stock taken over and now vested in the Provincial Governmer

Toronto, Hamilton & Buffalo Ry.—The Dominion Parliament is being asked to ratify an agreement making traffic arrangements for a period of 50 years between the T.H. & B.R. and the Hamilton & Dundas St. Ry., under sec. 364 of the Railway Act; to extend the time for the completion of its projected railway from Port Maitland to Port Colborne; to empower it to build a line from Welland to Port Colborne, Ont.; to enable it to enter into agreements under sec. 364 of the Railway Act with the Michigan Central Rd., the Canada Southern Ry. and the Grand Trunk Ry., or any of them, for a term exceeding 21 years, and to authorize the company to hold stock in any navigation or steamboat company. (July, 1916, pg. 282.)

The Toronto City Council went through the annual farce of appointing directors to certain practically non-existent railway companies at its first meeting for the year, Jan. 8. Ald. Ryding was appointed to the Credit Valley Ry Co.; Ald. Risk to the Toronto, Grey and Bruce Ry. Co.; Ald. Nesbitt to the Ontario & Quebec Ry. Co., and Ald. Archibald to the Northern Division of the G.T.R. These companies are now absorbed into the larger railway systems, but for a variety of reasons the corporate entities have been maintained. The directors have no duties, and as one of them complained, they are practically ignored. The city claims to be entitled to a representation on the boards of these companies, on account of subsidies granted by it.

Without Prejudice. — "A Vancouver court is asked to decide whether a grain elevator is a building or an engineering work. The storage elevators at Vancouver and Calgary are monumental blunders."—(Exchange.)

Demurrage Regulations in United States.

We have been asked to publish the amended demurrage regulations passed by the Interstate Commerce Commission, Nov. 29. They are as follows:

It appearing that on Nov. 15 and 29, 1916, the commission ordered a hearing concerning the propriety of the increases and the lawfulness of the rates, charges, regulations and practices for demurrage stated in the schedules, contained in tariffs designated in said orders, and pending such hearing and decision, the operation of the schedules contained in said designated tariffs was suspended until Mar. 31, 1917; and good reason appearing therefor, it is ordered, that carriers parties to said schedules be authorized to cancel forthwith all of said schedules suspended by said orders in Investigation and Suspension Docket 966, upon notice to this commission and to the general public by not less than three days filing and posting in the manner prescribed in sec. 6 of the Act to Regulate Commerce;

It is further ordered that said carriers parties to said schedules be authorized to file new schedules making no change in the present effective form of the weather rule or average agreement, providing for 2 days free time exclusive of Sundays or legal holidays, and the following rates of demurrage after expiration of free time: $1 for the 1st day; $2 for the 2nd day; $3 for the 3rd day, and $5 for the 4th and each succeeding day; provided track storage charges shall remain in effect as at present, except where the demurrage rate is $3 per day or more; provided further, that these provisions be embodied in tariffs fixed to expire by limitation on May 1, 1917; and provided further, that the carriers' demurrage schedules suspended by and designated in orders of Nov. 1 5and 29, 1916, are contemporaneously cancelled, upon notice to this commission and to the general public by not less than three days filing and posting in the manner prescribed in sec. 6 of the Act to Regulate Commerce.

Eastern Canadian Passenger Association.

At a meeting in Montreal, Jan. 3, the following were elected for the current year:

Chairman—E. O. Grundy.

Executive Committee—J. F. Pierce, chairman; R. L. Fairbairn, W. H. Snell, W. S. Cookson.

Rules Committee—C. W. Johnston, chairman; W. Maughan, R. L. Fairbairn, J. W. Hanley, G. C. Martin, A. L. Miller, L. W. Landman, H. H. Melanson, F. T. Grant.

General Baggage Agents' Committee—J. O. Apps, chairman; G. C. Allen, R. L. Fairbairn, C. C. Bonter, J. E. Quick, H. P. Dearing, W. M. Skinner, A. E. Plumer.

Secretary—G. H. Webster.

Canadian Ticket Agents' Association.—At an executive meeting at Toronto, Jan. 25, it was decided to hold the next annual meeting at Montreal, Sept. 25, 26 and 27. W. H. C. Mackay, City Ticket Agent, C.P.R., St. John, N.B., was elected a member of the executive committee, vice W. McIlroy, resigned on account of a change in his position rendering him ineligible.

The Quebec Legislature has ratified a grant of public lands to the Northern Colonization Ry., a C.P.R. subsidiary.

Mainly About Railway People Throughout Canada.

John Henderson, Roadmaster, G.T.R., Belleville, Ont., died there suddenly from paralysis, Jan. 14.

J. S. Dennis, Assistant to President, C.P.R., addressed the New York Credit Men's Association recently, on Canada after the war.

R. S. Claar, heretofore Assistant Engineer, Duluth, South Shore & Atlantic Ry. and Mineral Range Rd., has succeeded J. E. Bebb as office engineer.

T. D. Dugan, chief clerk, Car Accountant's department, G.T.R., Montreal, died there, Jan. 4, from peritonitis. He had been in G.T.R. service 34 years.

Mrs. G. R. R. Cockburn, who died in Toronto, Jan. 8, was the mother of Lady Tait, wife of Sir Thomas Tait, President, Fredericton & Grand Lake Ry. & Coal Co.

H. A. Woods, Assistant Chief Engineer, Grand Trunk Pacific Ry., Winnipeg, has been granted leave of absence for three months. It is reported that on his return he will resign.

G. C. Martin, General Freight and Passenger Agent, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., has been elected President of the Hamilton Board of Trade.

F. H. Phippen, K.C., General Counsel, Canadian Northern Ry., left Toronto Jan. 9, for California, accompanied by Mrs. Phippen and son, who will stay there for some time.

J. E. Burgess, assistant chief clerk in the office of Vice President and General Manager, Western Lines, C.P.R., Winnipeg, died there, Jan. 10, from Bright's disease, aged 26.

J. T. Arundel, General Superintendent, Ontario Division, C.P.R., who is on leave of absence on account of ill health, left Toronto Jan. 7, for Cuba, intending to spend some weeks there.

Lord Shaughnessy, President, C.P.R. telegraphed the company's officials and employes on Dec. 30: "My very best wishes for the new year. May it bring peace on the terms of Britain and her allies."

Frederic Nicholls, who has been appointed to the Senate, is a director of the Canadian Northern Ry., and Toronto Ry., and President, Canadian General Electric Co., and Canadian Allis Chalmers Co., Toronto.

George Mercer, formerly General Foreman, Duluth, South Shore & Atlantic Ry. and Mineral Range Rd., has been appointed Superintendent of Bridges and Buildings for those companies. Office, Marquette, Mich.

L. B. Archibald, Superintendent, Sleeping, Dining and Parlor Cars Department, Canadian Government Railways, Halifax, N.S., who had been on leave of absence through illness, for three months, returned to duty Jan. 1.

Capt. A. T. Shaughnessy, son of Lord Shaughnessy, who was killed at the front some months ago, had a seat on the Montreal Stock Exchange, as one of C. Meredith & Co.'s floor members. It was sold recently for $22,000.

Peter T. Shelby, a retired official of the Great Northern Ry. who served under Gen. J. F. Casement, contractor for the construction of a large part of the Union Pacific Rd., in the late sixties, died in Cleveland, Ohio, recently.

J. N. deStein, M.Can.Soc.C.E., Resident Engineer, Grand Trunk Pacific Ry., Regina, Sask., read a paper before the Canadian Society of Civil Engineers, Regina Branch, Jan. 4, on the railway from its conception to its completion.

Sir William D. Reid, President, Reid Newfoundland Co., who is said to have been interested in the Daily Mail, Montreal, is defendant in a personal suit by B. A. MacNab, ex editor of that paper, on an alleged claim for $20,700.

In commenting on the recent visit of **George Bury**, Vice President of the C.P.R. to England, one of the London dailies stated recently, "He is considered both in Canada and the U.S. to be one of the greatest transport experts in the world."

Lord Shaughnessy, who was mentioned recently in a Chicago press dispatch, as likely to become a member of the British

G. A. Montgomery,
Vice President and General Manager, Algoma Central & Hudson Bay Railway.

Cabinet, or to be asked to settle the Irish problem, has stated that such rumors are the creation of a newspaper imagination.

G. McL. Brown, European Manager, C.P.R., who has been visiting Canada for a few weeks, accompanied by Mrs. Brown, has returned to London, Eng. Both Mr. and Mrs. Brown addressed a number of meetings on war topics whilst in Canada.

P. B. Robb, chief clerk, Car Service Department, Canadian Government Railways, Moncton, N.B., was presented with a travelling bag and an address on leaving Moncton, Jan. 11, for Winnipeg, where he has been transferred to the same department.

Gideon Robertson, of Welland, Ont., who has been appointed to the Senate, is head of the Order of Railway Telegraphers. He took a prominent part at Winnipeg recently in bringing about an agreement between the C.P.R. and several branches of its employes.

H. E. Whittenberger, General Superintendent, Ontario Lines, G.T.R., Toronto, met with a painful accident recently when the brake lever on the rear of his official car flew round and struck him on the forehead with considerable force, necessitating a stitching of the wound.

L. V. Druce, Commercial Agent, Grand Trunk Pacific Ry., Vancouver, was presented with a purse of money by a number of friends and members of the Vancouver Transportation Club recently, on leaving for Edmonton, Alta., where he has been appointed Division Freight Agent.

Thos. J. Wall, General Agent, Passenger Department, C.P.R., Chicago, and his staff, sent out a unique Christmas and New Year greeting card in the shape of the company's trade mark, surmounted by the Canadian beaver and containing several views on the company's railway and steamship lines.

J. L. Englehart, Chairman, Timiskaming & Northern Ontario Ry. Commission, Toronto; W. I. Gear, Vice President, Robert Reford Co., steamship agents, Montreal; and P. J. Myler, Vice President, Canadian Westinghouse Co., Hamilton, Ont., have been re-elected directors of the Bank of Toronto.

W. W. Sloan, of the Secretary's Department, Canadian Northern Ry., Toronto, is President, and **F. C. Annessley**, private secretary to Sir William Mackenzie, is a director, of the Murray-Mogridge Mining Co., Ltd., of which Hon. Lt. Gen. Sir Sam Hughes is President, and which offered 100,000 shares for sale recently.

B. F. Runkle, whose appointment as Track Supervisor, Canadian Northern Ry. Hornepayne, Ont., was announced in our last issue, has been in C.N.R. service for the past four years, as section foreman and gang foreman on the construction of the line from Port Arthur, Ont., easterly. He was formerly employed on railway construction in Wisconsin.

G. H. Dawson, Surveyor General of British Columbia since 1911, has resigned to attend to his private affairs. Born in Quebec, about 50 years ago, he went to the Pacific Coast in 1889, after being in the C.P.R.'s Engineering Department, on the Quebec Division, for some three years. Latterly he has been acting as western representative, Imperial Munitions Board.

W. J. Underwood, formerly General Manager, Chicago, Milwaukee & St. Paul Ry., and brother of F. D. Underwood, President, Erie Rd., died Jan. 3, aged 65. He entered the company's service as a brakeman, in Oct. 1872, becoming successively conductor, Division Superintendent, Assistant General Superintendent, General Superintendent, Assistant General Manager and General Manager.

Thomas Fawcett, who has been appointed General Storekeeper, Western Lines, C.P.R., Winnipeg, entered C.P.R. service in 1905 as clerk in the Vice President's office, Winnipeg. Later he was successively, chief clerk, Paymaster's office; chief clerk, Local Treasurer's office; Paymaster, Calgary, Alta., and from 1911 to Nov. 30, 1915, General Fuel Agent, Winnipeg, and from Nov. 30, 1915, to the date of his present appointment, Assistant General Storekeeper, Western Lines, Winnipeg.

P. J. M. Woslyng, formerly Roadmaster, Aldersyde Branch, C.P.R., died at Lethbridge, Alta., Jan. 8, after an illness lasting over a year. He was born in Sweden in 1873, and came to Canada at the age of 18, and entered C.P.R. service, being engaged on construction and mainten-

ance. He later transferred to the Alberta Ry. & Irrigation Co., and was in that service for two years, until the company was taken over by the C.P.R.

L. V. Druce, who has been appointed Division Freight Agent, Grand Trunk Pacific Ry., Edmonton, Alta., was born at London, Eng., Oct. 20, 1873, and entered railway service in Aug., 1896, at Los Angeles, Cal., and was, from Mar. 1897 to Aug. 1904, Agent, Seattle, Wash.; Aug. 1904 to May 23, 1910, Commercial Agent, Seattle, Wash.; May 23, 1910 to Dec. 21, 1916, Commercial Agent, G.T.R., G.T.P.R. and G.T.P. Coast Steamship Co., Vancouver, B.C.

Thomas Turner, who died at Niagara Falls, Ont., Jan. 4, aged 91, came to Canada in 1854, the year of the opening the Great Western Ry. from Hamilton to Niagara Falls. He was in that company's service, and transferred to the G.T.R when it took over the Great Western, and occupied various positions througho Ontario. He was yard foreman at Niagara Falls for many years, and roadmaster between Delhi and Fort Erie, until he was superannuated about 20 years ago.

Robt. Kerr, who was Passenger Traffic Manager, C.P.R., when he retired Sep. 10, 1910, and who died at Toronto, Dec. 9, 1916, left an estate of $21,720, of which $10,220 was life insurance, $2,750 household goods and personal effects, $2,250 stock of Great West Life Assurance Co., and $6,500, his house on Madison Ave., Toronto. To his son, Frederick C., he left the gold watch given him by the citizens of Winnipeg, and to his widow, a life interest in the residue of the estate, which at her death passes to their three daughters.

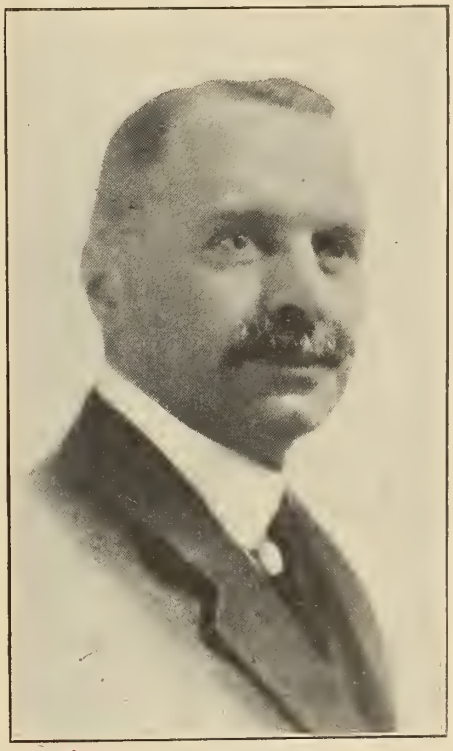
William Burton Johnson, whose appointment as Master Mechanic, District 6, Intercolonial Division, Canadian Government Railways, Truro, N.S., was announced in our last issue, and whose portrait appears in this issue, was born there, Oct. 8, 1872, and entered the Intercolonial Ry. service in 1888, since when he has been, to 1890, messenger, Traffic Department, Truro, N.S., 1890 to 1900, fireman; 1900 to 1913, locomotive man; 1913, standard rule instructor, St. John, N.B., and Halifax, N.S.; 1914 to Dec. 1916, locomotive man, Dartmouth, N.S.

George C. Gahan (not Cahan as menpointed Assistant General Auditor, tioned in our last issue), who has been appointed Assistant General Auditor, C.P.R., Montreal, was born there, Dec. 28, 1874, and entered C.P.R. service in April, 1890, since when he has been, to Oct. 1891, junior clerk, Auditor of Freight and Telegraph Receipts' office; Oct. 1891 to Aug. 1896, junior clerk, Auditor of Disbursements' office; Aug. 1896 to Dec. 1, 1916, clerk, bookkeeper and chief clerk, successively, in Comptroller's and General Auditor's offices, all in Montreal.

L. J. Rouleau, who has been appointed Commercial Agent, G.T.R., Quebec, Que., was born at Montreal, Jan. 6, 1879, and entered G.T.R. service, Apr. 1, 1899, since when he has been, to Mar., 1903, clerk and timekeeper, Local Freight Department, Montreal; Mar., 1903, to Nov., 1905, claims investigator, Freight Claims Department, Montreal; Nov., 1905, to Apr., 1907, rate clerk, Division Freight Office, Montreal; Apr., 1907, to Apr., 1909, Soliciting Freight Agent, Montreal; Apr., 1909, to Dec. 30, 1916, Travelling Freight Agent, G.T.R., and Agent, National Despatch-Great Eastern Line, Montreal.

J. Russell Brent, who was appointed Night Chief Dispatcher, G.T.R., London, Ont., recently, was born at Strathroy, Ont., Aug. 16, 1889, and entered G.T.R. service Aug. 16, 1906, since when he has been, to June 1, 1907, operator at various stations; June 1, 1907, to June 14, 1908, operator, Komoka, Ont.; June 14, 1908, to June 1, 1909, operator, Burlington Jct., Ont.; July 1, 1909, to Aug. 30, 1910, day operator, Sarnia Tunnel; Aug. 30, 1910, to Feb. 1, 1913, relay operator, London, Ont.; Feb. 1 to Dec. 1, 1913, relieving dispatcher, London, Ont.; Dec. 1, 1913, to Nov. 15, 1916, dispatcher, London, Ont.

Leon Spoor Landers, who has been appointed Assistant Engineer, Canadian Government Railways, Levis, Que., was born at Farnham, Que., Dec. 15, 1888, and entered railway service in May, 1910, since when he has been, to Feb., 1911, rod man, C.P.R., Farnham, Que.; Feb., 1911, to Mar., 1912, draughtsman, Resident Engineer's office, Eastern Division, C.P.R., Montreal; Mar., 1912, to Oct., 1913, transit man, C.P.R.,; Oct., 1913, to May, 1915, transit man, District 4, Intercolonial Ry., New Glasgow, N.S.; May, 1915, to Jan., 1917, Resident Engineer, District 4, Intercolonial Division, Canadian Government Railways, Truro, N.S.



P-180. E. Alexander,
Secretary, Canadian Pacific Railway Company.

David Frazer Thomas, whose appointment as General Manager, Algoma Eastern Ry., Sudbury, Ont., was announced in our last issue, was born in Halton County, Ont., Apr. 20, 1867, and commenced his railway career in 1886, since when he has been, to 1887, section man, Port Huron and North Western Ry., 1887 to 1891, learning electrical business with Westinghouse Co.; 1891 to 1897, on U. S. engineering staff on construction of Poe locks, Sault Ste. Marie Canals; 1897 to 1903, on engineering staff, Michigan Lake Superior Power Co., Sault Ste. Marie, Mich.; 1903 to Dec. 1, 1916, Superintendent, Trans St. Marys Traction Co., and International Transit Co., ferry and street railway, Sault Ste. Marie, Mich.

Ernest Alexander, who has been appointed Secretary, C.P.R. Co., Montreal, and whose portrait appears in this issue, was born in Yorkshire, Eng., Dec. 8, 1862, and commenced railway work in 1882 as private secretary to the Superintendent, Southern Division, G.T.R., Hamilton, Ont.; remaining in that position until the abolition of the company's general offices there, early in 1893. On Mar. 1, 1893 he entered C.P.R. service as secretary to the President (Sir William Van Horne), and on Sir William's retirement from the Presidency in 1899, he remained in the same capacity with Sir Thomas Shaughnessy, until July 1908, when he was appointed Assistant Treasurer, and in Aug. 1912, was appointed Assistant Secretary.

Walter R. Eastman, who has been appointed New England Passenger Agent, G.T.R., Boston, Mass., was born at Hartland, Vt., Apr. 15, 1875, and entered Central Vermont Ry. service, Nov. 19, 1899, since when he has been, to Feb, 1900, transfer foreman yard clerk, Brattleboro, Vt.; Feb. to Mar., 1900, clerk, Montville, Conn.; Mar., 1900, to Jan., 1901, billing clerk, White River Jct., Vt.; Jan. to Apr., 1901, billing clerk, Burlington, Vt.; Apr., 1901, to Apr., 1903, ticket clerk, St. Albans, Vt.; Apr., 1903, to May, 1906, Travelling Passenger Agent, St. Albans, Vt.; May, 1906, to Jan. 1, 1917, chief clerk, General Passenger Agent, St. Albans, Vt.

John D. McAuley, who has been appointed Commercial Agent, Grand Trunk Pacific Ry., and G. T. P. Coast Steamship Co., Prince Rupert, B.C., was born in Plantaganet, Ont., June 11, 1884, and entered railway service Oct. 1904, since when he has been, to Dec. 1908, in Local Freight Department, G.T.R., Montreal; Dec. 1908 to June 1911, in Freight Claims Department, G.T.R., Montreal; June 1911 to Sept. 1913, in Foreign Freight Department, G.T.R., Montreal; Sept., 1913, to Sept. 1914, City Freight Agent, Grand Trunk Pacific Ry., Vancouver, B.C.; Sept. 1914 to Mar. 1, 1916, City Freight Agent, G.T.P.R., Regina, Sask.; Mar. 1 to Dec. 21, 1916, Travelling Freight and Passenger Agent, G.T.P.R. and G.T.P.C.S. Co., Juneau, Alaska.

George N. Goad, who has been appointed Terminal Trainmaster, Toronto Terminals, Canadian Northern Ry., was born in Toronto, Nov. 26,, 1884, and entered railway service in Sept., 1901, since when he has been, to July, 1902, junior clerk, Division Freight Agent's office, G.T.R., Toronto; July, 1902, to Sept., 1904, stenographer, same office; Sept., 1904, to Dec., 1905, chief clerk, Canadian Freight Agent's office, Lehigh Valley Rd., Toronto; Dec., 1905, to Mar., 1907, stenographer, Third Vice President's office, Canadian Northern Ry., Toronto; Mar., 1907, to Aug. 31, 1915, chief clerk to Superintendent and General Superintendent, C.N.R., Toronto; Sept. 1 to Dec. 31, 1915, chief clerk to General Manager, Eastern Lines, C.N.R., Toronto; Dec. 31, 1915, to Jan. 10, 1917, Inspector of Transportation, Eastern Lines, C.N.R., Toronto.

Alfred Erwin McMaster, who resigned recently from railway service on his appointment as Assistant Secretary for British Columbia, Canadian Manufacturers' Association, Vancouver, was born at Perth, Ont., Oct. 22, 1885, and entered railway service in 1902, since when he has been, to May 1903, in Freight Department, C.P.R., Keewatin, Ont.; May 1903 to Aug. 1907, in various position up to assistant agent, C.P.R., Port Arthur, Ont.; Aug. 1907 to Aug. 1908, agent, and chief clerk to Superintendent, Grand Trunk Pacific Ry., Fort William, Ont.; Aug. 1908 to July 15, 1913, agent, and General Agent, G.T.P.R., G.T.R. System, and Grand Trunk Pacific Coast Steamship Co., Prince Rupert, B.C.; July 15, 1913 to Sept. 30, 1916, Commercial Agent, G. T. P. R., Regina, Sask.; Sept. 30 to Dec. 21,

1916, Division Freight Agent, G.T.P.R., Edmonton, Alta.

William Bedford Harper, who has been appointed Resident Engineer, Laurentian Division, Quebec District, C.P.R., Montreal, was born at Baie Verte, N.B., Aug. 15, 1882, educated at Queen's University, Kingston, Ont., and entered railway service in 1903, since when he has been, to 1906, rod man, leveller and transit man, Nova Scotia Ry., and Cape Breton Ry., at Halifax, New Glasgow and Sydney, N.S.; June, 1906, to May, 1908, transit man on location and preliminary surveys, and Resident Engineer on construction, Canadian Northern Ry., Parry Sound, Ont.; June, 1908, to June, 1911, Resident Engineer on construction, National Transcontinental Ry., Nipigon, Ont.; June, 1911, to Ap., 1915, Assistant Engineer, double track and bridge construction, C.P.R., Montreal; Apr., 1915, to Dec., 1916, Assistant Engineer in charge of construction, Quebec Terminals, C.P.R., Quebec, Que.

William Mitchell Hood, whose appointment as District Freight and Passenger Agent, Canadian Northern Ry., Sudbury, Ont., was announced in our last issue, was born at Harrow, Ont., Nov. 25, 1865, and entered railway service, Nov. 1, 1892, since when he has been, to Mar., 1900, station agent, Lake Erie & Detroit River Ry., McGregor, Ont.; Apr. to Aug., 1900, Soliciting Freight and Passenger Agent, same road, Cleveland, Ohio; Sept., 1900, to Nov., 1901, Travelling Freight and Passenger Agent, same road, Walkerville, Ont.; Dec., 1901, to Aug., 1905, Local Freight Agent, Pere Marquette Rd., Sarnia, Ont.; Sept., 1915, to Feb., 1911, Local Freight Agent, same road, Chatham, Ont.; Mar., 1911, to Feb., 1913, Travelling Passenger Agent, same road, London, Ont.; Mar., 1913, to Jan., 1915, Travelling Passenger Agent, Canadian Northern Ry., Toronto; Feb. to Nov., 1915, City Freight and Passenger Agent, same road, Oshawa, Ont.; Dec., 1915, to Dec., 1916, Travelling Freight and Passenger Agent, same road, North Bay, Ont.

Albert Davidson, who has been appointed Commercial Agent, Grand Trunk Pacific Ry., and G.T.P. Coast Steamship Co., Vancouver, B.C., was born at St. Henri, Montreal, Jan. 29, 1885, and entered railway service, Aug. 22, 1899, since when he has been, to Nov., 20, 1901, clerk, Foreign Freight Department, C.P.R., Montreal; Nov. 20, 1901, to Mar. 16, 1903, clerk, Vice President's office (Traffic), C.P.R., Montreal; Mar. 16, 1903, to Aug. 15, 1904, stenographer, General Freight Department, C.P.R., Vancouver, B.C.; Aug. 15, 1904, to Mar. 23, 1905, secretary to Assistant Freight Traffic Manager, C.P.R., Winnipeg; Mar. 23, 1905, to Apr. 1, 1909, tracing, claims, rate and steamship clerk, General Freight Office, C.P.R., Vancouver, B.C.; April 1 to Oct. 1, 1909, chief clerk to Assistant General Freight Agent, C.P.R., Vancouver, B.C.; Oct. 1, 1909, to June 1, 1910, Travelling Freight Agent, Steamship Lines, C.P.R., Vancouver, B.C.; June 1, 1910, to July 15, 1913, City Freight Agent, G.T.R., G. T. Pacific Ry. and G. T. Pacific Steamship Co., Vancouver, B.C.; July 15, 1913, to Dec. 21, 1916, General Agent, G. T. R. System, and Commercial Agent, G.T.P.R., and G.T.P. C.S. Co., successively.

A. B. Calder, who has been appointed Assistant General Passenger Agent, C. P. R., Montreal, and whose portrait appears in this issue, was born at London, Ont., Aug. 24, 1867, and from 1882 to 1887 was engaged in various capacities on C.P.R. construction west of Brandon, Man. He entered C.P.R. service in 1887, since when he has been, to 1889, in Passenger Department, Winnipeg; 1889 to Oct. 1893, ticket clerk, Tacoma, Wash.; Oct. 1893 to July, 1895, Travelling Passenger Agent, Tacoma, Wash.; July 1895 to Dec. 1897, Travelling Passenger Agent, San Francisco, Cal.; Dec. 1897 to Nov. 1904, Travelling Passenger Agent, Tacoma, Wash.; July 1895 to Dec. 1897, Travelling Passenger Agent, San Francisco, Cal.; Dec. 1897 to Nov. 1904, Travelling Passenger Agent, Seattle and Tacoma, Wash.; Nov. 1904 to Nov. 1910, General Agent, Passenger Department, Seattle, Wash.; Nov. 1910, to Sept. 1911, General Agent, Passenger Department, Chicago, Ill.; Sept. 1, 1911 to Jan. 1916, associated with his father in a general ticket agency at Winnipeg.

R. S. McCormick, M.Can.Soc.C.E., who has been appointed General Superintendent and Chief Engineer, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont., was born at Quaker City, Guernsey Co., Ohio, June 22, 1873, and entered Flint & Pere Marquette Ry. service at Saginaw, Mich., in 1890, since when he has been, to Oct., 1894, chainman, rodman and general assistant to the Chief Engineer, consecutively, F. & P.M.R., Saginaw, Mich.; Oct., 1894, to May, 1897, assistant and draughtsman, Division Engineer's office, G.T.R., Battle Creek, Mich.; May 1897 to Feb. 1900 Assistant Engineer Maintenance of Way, G.T.R., Detroit, Mich.; Feb. 1900 to April 1903 locating engineer Algoma Central and Hudson Bay Ry., Sault Ste. Marie, Ont.; April 1903 to Jan. 1904, Assistant Engineer Maintenance of Way, Pere Marquette Rd., Saginaw, Mich.; June to Aug. 1906, engineer on barge canal construction, Rochester, N.Y.; Oct. 1906 to June 1909, Assistant Engineer in charge of construction of 50 miles G.T.P.R. Lake Superior branch and Locating Engineer G.T.P.R. Regina north branch; July 1909 to May 1, 1910, Division Engineer in charge of surveys Algoma Central and Hudson Bay Ry., Sault Ste. Marie, Ont., May 1, 1910 to Nov. 1916, Chief Engineer, Algoma Central and Hudson Bay Ry. and Algoma Eastern Ry., Sault Ste. Marie, Ont.

G. A. Montgomery, whose appointment as Vice President and General Manager, Algoma Central and Hudson Bay Ry., Sault Ste. Marie, Ont., was announced in our last issue, was born at Bradford, Ont., Feb. 11, 1871, and entered railway service, Sept. 1, 1886, since when he has been, to Sept. 1887, assistant to agent, Northern Ry., Newmarket, Ont.; Sept. 1887 to March 1889, agent, G.T.R., Powassan, Ont.; March 1889 to March 1890, freight clerk, C.P.R., North Bay, Ont.; March 1890 to June 1893, chief clerk, freight department, C.P.R., Sudbury, Ont. June to Aug. 31, 1893, relieving agent, C.P.R., Lake Superior Division; Aug. 31, 1893 to June 1900, chief clerk to Superintendent, District 1, Lake Superior Division, C.P.R., North Bay, Ont.; June 1900 to Aug. 28, 1902, chief clerk to General Superintendent, Algoma Central and Hudson Bay Ry., Sault Ste. Marie, Ont.; Aug. 28, 1902 to Aug. 15, 1910, Superintendent, Algoma Eastern Ry., Sudbury, Ont.; Aug. 15, 1910, to Mar. 1, 1911, Superintendent, Algoma Central and Hudson Bay Ry., Michipicoten Harbor, Ont.; Mar. 1, 1911, to Oct. 15, 1913, Superintendent, same road, Sault Ste. Marie, Ont.; Oct. 15, 1913, to the date of his present appointment, General Superintendent, same road, and Algoma Eastern Ry., Sault Ste. Marie, Ont.; Sept. to Nov., 1916, acting General Manager for the Receivers, A. C. & H. B. R., and acting General Manager,

John Stoughton Dennis, who has been elected President of the Canadian Society of Civil Engineers for the current year, was born at Toronto in 1856, the son of the late Lt. Col. J. S. Dennis, who was the first Surveyor General of Canada, and subsequently the first Deputy Minister of the Interior. He was educated at the Toronto and Kingston Grammar Schools, and Upper Canada College, Toronto, and graduated from the old military school at Kingston, Ont., before the establishment of the Royal Military College there. He served articles as a Dominion land surveyor with the late Lindsay Russell, Assistant Surveyor General, and was appointed Dominion topographical surveyor in 1877. From 1872 to 1879, he was engaged on survey work for the Dominion Government in Manitoba and the North West Territories, and from 1879 to 1882, was engineer and surveyor for the Hudson's Bay Co., and laid out what is now the southern part of the city of Winnipeg, constructing the first trunk sewer there. In 1882 he became a member of Vaughan, Dennis and Co., consulting engineers, Winnipeg, and in 1885 entered Dominion Government service as Inspector of Surveys, becoming Chief Inspector in 1892. In 1896 he entered the Northwest Territories Government service and in 1899 was appointed Deputy Minister of Public Works, Northwest Territories. He entered C.P.R. service in 1902, as Superintendent of Irrigation and Chief Engineer of Irrigation Works, then being carried out in Alberta. He was subsequently appointed Land Commissioner for British Columbia, and in 1904, Assistant to the Second Vice President. In 1910 he was appointed Manager of Irrigation, and Assistant to the President. C.P.R., at Calgary, Alta., and was removed to Montreal, Nov. 1, 1916. After graduating from the military school, he served for a short time as lieutenant of the Governor General Foot Guards at Ottawa, and in 1885, commanded, as captain, the Intelligence Scout Corps attached to General Middleton's column, during the Riel rebellion, being mentioned in dispatches for service at the battle of Batoche. He was later transferred to the reserve of officers with the brevet rank of major, and in 1916 was appointed lieutenant colonel commanding the Calgary battalion of the reserve militia. He joined the Canadian Society of Civil Engineers as a member, Nov. 21, 1901, was a councillor for 1906 and 1911, and was Vice President in 1907. He is a past President of the American Society of Irrigation Engineers.

The Grain Growers' Grain Co., Ltd., is applying to the Dominion Parliament for authority to change its name to United Grain Growers, Ltd., or to empower it to adopt the name by by-law; to enable meetings to be held elsewhere than at the head office at Winnipeg; to increase the capital stock to $5,000,000; to enable shareholders to hold 100 shares each; to extinguish the right of proxy voting, and to enable the company by by-law to form shareholders in groups and to provide for representation at meetings of the company of such groups by delegates.

Increase in Cartage Rates.—The carriers contemplate making some changes in their carriage rates east of Port Arthur on Mar. 1. Car load lots will not be affected, but it is proposed, among other things, to advance the minimum charge of "smalls" from 20c to 23c, which will include shipments up to 575 lb. The proposed changes will have to be approved by the Board of Railway Commissioners before becoming effective.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearings took place, and not those on which the orders were drawn.

General order 174, suspending Canadian Car Service Rules 1, 2, 6 and 15 from Jan. 1, to Apr. 30, 1917, and substituting others. These were published in full in our last issue.

General order 175, Dec. 26, 1916.—Prescribing charges for demurrage and track storage on grain and lumber held in transit at Cartier, Ont., tec. from Jan. 1 to Apr. 30, 1917. This order is given in full on another page.

General order 176, Dec. 26, 1916.—Re car supply for coal traffic. This order is given in full on another page.

General order 177, Jan. 10, 1917.—Ordering that tariff of freight rates from points in U.S. to points in Canada include or be supplemented by rule to the effect that said rates, unless specifically indicated as being competitive, will apply to intermediate points in Canada not enumerated in said tariffs, and that railway companies arrange accordingly. This order is given in full on another page.

25728, 25729. Dec. 11.—Recommending to Governor in Council for sanction agreements between Vancouver, Victoria & Eastern Ry. & Navigation Co. and Canadian Northern Pacific Ry. for joint use of V.V. & E. Ry. & N.Co.'s tracks between New Westminster and Vancouver and C.N.P.R. tracks between Hope and Sumas Landing, B.C.

25730. Dec. 18.—Extending to Feb. 18, 1917, time for construction by C.P.R. of siding for Dominion Sugar Co., Chatham, Ont., as authorized by order 24704, Feb. 1, 1916.

25731. Dec. 19.—Dismissing J. A. Kammerer's complaint against refusal of C.P.R. to place car for him on private siding.

25732. Dec. 19.—Authorizing C.P.R. and Canadian Northern Ontario Ry. to operate over connection with C.N.O.R. near Current River, Ont.

25733. Dec. 20.—Authorizing G.T.R. to build spur for National Iron Works, Toronto.

25734. Dec. 20.—Authorizing Algoma Central & Hudson Bay Ry. to operate over crossing of Canadian Northern Ontario Ry. at mileage 80.54, Port Arthur to Sudbury Branch.

25735. Dec. 18.—Approving agreement between Bell Telephone Co. and South McNaughton Telephone Co., Renfrew County, Ont.

25736. Dec. 19.—Authorizing C.P.R. to build spur for Thompson & Norris Co. of Canada, Montreal.

25737. Dec. 20.—Approving Moncton & Buctouche Ry. standard freight mileage tariff, C.R.C. 23.

25638. Dec. 22.—Relieving G.T.R. from speed limitation of 10 miles an hour over crossing at St. Hilaire, Que.

25739. Dec. 20.—Authorizing G.T.R. to build siding for Tudhope Carriage Co., Orillia, Ont.

25740. Dec. 21.—Extending to Jan. 31, 1917, time for installation by G.T.R. of gates at Bronson Ave., Ottawa, Ont.

25741. Dec. 21—Ordering C.P.R. to stop train 51, on flag, at Langenburg, Sask., on Sundays.

25742. Dec. 21.—Ordering G.T.R. to repair fence on south side of Sunnyside Bridge, Toronto, one third of cost to be paid by the city.

25743. Dec. 21.—Authorizing G.T.R. to build two spurs and to etxend existing siding for Willys-Overland, Ltd., Toronto.

25744. Dec. 20.—Authorizing G.T.R. to build spur for British American Oil Co., Toronto.

25745. Dec. 22.—Authorizing Edmonton, Dunvegan & British Columbia Ry. to build spur to Cambrian collieries and to cross road between n.e. ¼ and n.w. ¼, Sec. 9, Tp. 55, R. 24, w.4m., Alta.

25746. Dec. 21.—Authorizing Canadian Northern Ry. to build spur to coal mine in n.w.¼, Sec. 14, Tp. 49, R. 18, w.4m., at Dodds, Alta.

25747. Dec. 22.—Authorizing G.T.R. to build extension to spur for W. H. Banfield & Sons, Toronto.

25748m. Dec. 22.—Authorizing C.P.R. to build spur for Energite Explosives Co., Horton Tp., Ont.

25749. Dec. 21.—Amending Bell Telephone Co.'s tariff, C.R.R. 2537, re rates for Toronto Island rate area (Summer service).

25750. Dec. 22.—Authorizing C.P.R. to use bridge 35.8, Brandon Sundivision, Manitoba District.

25751. Nov. 29.—Ordering C.P.R. to build pedestrian subway under its tracks in Virden, Man., from station platform opposite Wellington St., to north of track.

25752. Dec. 22.—Authorizing Mathias Range Aqueduct Co. to lay water pipe under Quebec & Lake St. John Ry. in Chicoutimi, Que. Subsequently suspended. See or. 25799.

25753. Dec. 22.—Ordering G.T.R. and C.P.R. to install gates operated by day and night watchman at Church St., Welland, Ont.

25754. Dec. 27.—Postponing, pending decision of Supreme Court, upon questions to be submitted and until further order the effective date of Great North Western Telegraph Co.'s tariff C.R.C. 47, effective Jan. 1, 1917. See another page in this issue under Telegraph, Telephone and Cable Matters.

25753. Dec. 26.—Dismissing application of Harry Horne Co., Toronto, for same specific classification for health salts as provided in Canadan Freight Classification for Epsom salts.

25756. Dec. 26.—Authorizing G.T.R. to build spur on Lachine Canal reserve, Montreal, and to operate over proposed C.P.R. track to be laid on lots 3412-9-8-7-6-6, Montreal Parish.

25757. Dec. 26.—Authorizing C.P.R. to build a spur for Dominion Flour Mills, Ltd., on Lachine Canal North Bank Branch in lot 3412-9-8-7-6-5, Montreal Parish.

25758. Dec. 22.—Authorizing Town of Sudbury, Ont., to build highway under Canadian Northern Ontario Ry. to connect Leslie and Murray Sts.

25759. Dec. 26.—Authorizing Canadian Northern Ontario Ry. to cross side road between lots 6 and 7, Gloucester Tp., Ont.

25760. Dec. 27.—Authorizing North American Collieries, Ltd. (Lethbridge Colliery), to extend its main west entries, comprising 3 tunnels 8 x 6 ft., across C.P.R. right of way, about 600 ft. below the surface in n.w. ¼ Sec. 16 and s.w. ¼ Sec. 21, Tp. 9, R. 22 w4m.

25761. Dec. 28.—Ordering C.P.R. to file supplement to its tariff C.R.C. no. W-2214, continuing rate on forest products for distances over 500 miles.

25762. Dec. 27.—Ordering Canadian Northern Ry. to erect standard third class station at Mikado, Sask.

25763. Dec. 22.—Authorizing Canadian Northern Ry. to close and divert traffic on the east and west road allowance in n.e. ¼, Sec. 11, Tp. 8, R. 19, w2m.

25764. Dec. 30.—Authorizing Toronto, Hamilton & Buffalo Ry. and Lake Erie & Northern Ry., pending construction of permanent interchange track authorized by order 25570, Oct. 27, to interchange cars on temporary connecting track, Brantford, Ont.

25765. Dec. 27.—Ordering C.P.R. to maintain crossing on south boundary of Lot 12, Con. 10, Markham Tp., Ont., for joint use of Mrs. H. Hagerman and A. Bradley, and for future owners of either or both properties.

25766. Dec. 28.—Extending to Feb. 28, 1917, time for installation by C.P.R. of electric bell at crossing of road allowance between Lot 22, Con. 1, and Lot 22, Broken Front Concession, Darlington Tp., Ont.

25767. Dec. 28.—Authorizing Canadian Northern Ontario Ry. to build spur for Pointe Anne Quarries, Ltd., at mileage 126 from Toronto, in Thurlow Tp., Ont.

25768. Dec. 28.—Authorizing Canadian Northern Quebec Ry. Co. to build spur for Hepburn Bros., at mileage 174.04, Longue Pointe Parish, Montreal.

25769. Dec. 29.—Authorizing C.P.R. to cross Icelandic River Road at Arborg, Man.

25770. Dec. 27.—Authorizing Grand Trunk Pacific Ry. to build spur from its main line in n.w. ¼ Sec. 18, Tp. 40, R. 22, w3m., at Unity, Sask.

25771. Dec. 28.—Approving C.P.R. plan of proposed overhead crossing at London St., Windsor, Ont.

25772. Jan. 3, 1917.—Authorizing A. D. McCormack, Castor, Alta., to build tunnel under Calgary & Edmonton Ry., Lacombe Branch, top of tunnel to be at least 30 ft. below track level.

25,773. Dec. 28, 1916.—Authorizing C.P.R. to build second track across road allowance between Secs. 5 and 6, Tp. 12, R. 5, w4m, Alta.

25774. Dec. 28.—Authorizing C.P.R. and G.T.R. to operate over interlocking plant at spur to Dominion Sugar Co., Chatham, Ont.

25775. Dec. 28.—Dismissing City of Ottawa's application for order directing G.T.R. to build highway crossing over its track at Spadina Ave.

25776. Jan. 3, 1917.—Authorizing C.P.R. to build four sidings for Canadian Nitro-Products, Ltd., York Tp., Ont.

25777. Jan. 5.—Extending to May 31 time for construction by C.P.R. of siding and loading platform facilities at mileage 2, Moose Jaw North Westerly Branch, Sask.

25778. Jan. 4.—Authorizing Canadian Northern Quebec Ry. to build spur for International Mfg. Co., Longue Pointe Parish, Montreal.

25779. Jan. 4.—Amending order 25763, Dec. 22, 1916, re closing of road allowance by Canadian Northern Ry. between Secs. 11 and 14 and Secs. 11 and 12, Tp. 8, R. 19, w2m.

25780. Jan. 3.—Approving agreement between Bell Telephone Co. and Fallis Line Telephone Co., Durham County, Ont., Dec. 13, 1916.

25781. Jan. 3.—Approving location and plans of ferry dock shelter to be erected by G.T.R. for passengers using car ferry at Cobourg, Ont.

25782. Jan. 5.—Authorizing Niagara, St. Catharines & Toronto Ry. to build deck plate girder span to replace existing structure across Ormond St., Thorold, Ont.

25783. Jan. 3.—Approving Algoma Eastern Ry. bylaw authorizing J. P. Mader, General Agent, to prepare and issue tariffs of tolls.

25784. Jan. 4.—Authorizing Canadian Northern Quebec Ry. to build spur for Laurentide Co., Grand Mere, Que.

25785. Jan. 5.—Ordering C.P.R. to erect station at Evesham, Sask.

25786. Jan. 8.—Ordering C.P.R. to install improved type of automattic bell at Duke St. crossing, Guelph, Ont.

25787. Jan. 8.—Amending order 25593, Nov. 2, 1916, re crossing of Michigan Central Rd. by Niagara, Welland & Lake Erie Ry. by a subway and providing that the cost be paid, $6,500 by applicant, and the balance by Niagara, Welland & Lake Erie Ry.

25788. Jan. 5.—Approving G.T.R. plan of platform between tracks and station at Preston, Ont., and removal of switch stands.

25789. Jan. 8.—Ordering C.P.R. to provide automatic bell at crossing at Campbellville station, Ont.

25790. Jan. 8.—Authorizing G.T.R. to build two sidings for Roger Miller & Sons on the west side of Hanna Ave., Toronto.

25791. Jan. 8.—Ordering that Michigan Central Rd. crossing of third public highway west of Brookfield, Ont., he closed and traffic diverted over new roadway.

25792. Dec. 29, 1916.—Ordering Canadian Northern Quebec Ry. to establish non-agency station at St. Alexis, on its Rawdon Branch, and to close non-agency station, St. Alexis, on its Jollette & Hawkesbury line, traffic there to be taken care of at Rawdon Jct.

25793. Jan. 9.—Authorizing Hamilton St. Ry., G.T.R. and Hamilton Radial Ry. to operate over Kenilworth Ave, Barton Tp., Ont., without first stopping cars and trains.

25794. Jan. 9.—Authorizing G.T.R. to build branch line for Terminal Warehouse, Registered, St. Anns Ward, Montreal.

25795. Jan. 19.—Approving plans and specifications of work to be done under Michigan Central Rd. in connection with Kingsmill drain, Yarmouth Tp., Ont.

25796. Jan. 9.—Extending to Mar. 9, titme within which C.P.R. may install bells authorized by order 25184, July 24, 1916, at Crawford's highway crossings, between Westfield and Hillandale, N.B.

25797. Jan. 10.—Approving agreement between Bell Telephone Co. and Hay Tp., Ont., Dec. 19, 1916.

25798. Jan. 11.—Dismissing application of Shingle Agency of British Columbia for authority to include with shipments of shingles requisite quantity of zinc clad nails, nails to be charged same rate as shingles.

25799. Jan. 12. Suspending order 25752, Dec. 22, 1916, which authorized Mathias Range Aqueduct Co. to lay water pipe under Canadian Northern Quebec Ry. at Chicoutimi, Que., pending disposition of action by C.N.Q.R. to restrain the construction.

25800. Jan. 12.—Amending order 25796, Jan. 9, re installation of electric bells at crossings between Westfield and Hillandale, N.B.

25801. Jan. 16.—Extending to May 31 time within which work under order 19087, Apr. 16, 1913, approving location of Lake Erie and Northern Ry. Lorne Bridge, Brantford, to Main St., Galt, Ont., may be completed.

25802. Jan. 17.—Extending to June 1, time within which Lake Erie and Northern Ry. may operate over interlocking plant at station 7-23, Brantford, Ont., where it crosses G.T.R.

25803. Jan. 17.—Authorizing Canton Bois municipality, Que., to change location of crossing and divert Ste. Anne's Rapids Route, highway about 80 ft. westerly, at mileage 36.81, Canadian Northern Ry. Garneau-Riviere a Pierre branch.

25804. Jan. 17.—Extending to June 1, time within which Lake Erie and Northern Ry. may operate over crossing of Toronto, Hamilton and Buffalo Ry., in Brantford, Ont., pending installation of interlocking plant.

25805. Jan. 12.—Ordering Canadian Northern Ry. to stop its morning train due at Ottawa at 7.30 and shown on new timetable to arrive at 7.45; and train leaving Ottawa at 1.10 p.m., on flag at Merivale, Ont., also to erect flag station and establish facilities for loading and unloading livestock and other carload freight there.

25806. Jan. 17.—Approving plans and specifications of covered drain to be built by Sandwich East Tp., under Essex Terminal Ry., in Ford City, Ont.

25807. Jan. 18.—Authorizing New York Central Rd. to build bridge 6-A, near Hawthorne station, Ont.

25808. Jan. 18.—Authorizing Canadian Northern Ry to build spur for Gillespie Elevator and Flour Mill Co., St. Albert, Alta.

25809. Jan. 19.—Ordering C.P.R. to provide station at Kreuzberg, Man., by Oct. 1.

25810. Jan. 19.—Authorizing G.T.R. to rebuild bridge 289 over Nottawasaga River, Essa Tp., Ont.

25811. Jan. 19.—Authorizing C.P.R. to build spur for J. A. Gendron, Drummondville Parish, Que.

25812. Jan. 19.—Ordering Canadian Northern Ry. to appoint station agent at Arran, Sask., by Mar. 1.

25813. Jan. 20.—Authorizing Montreal Tunnel and Terminal Co. to build tunnel cross sections as

shown on standard plans on file with Board, also approving clearances through the tunnel.

25814. Jan. 23.—Authorizing G.T.R. to rebuild bridge 210 across Little East River, near Novar, Ont.

25815. Jan. 23.—Approving agreement between Bell Telephone Co. and Back Line Telephone Co., Dufferin County, Ont. Dec. 16, 1914.

25816. Jan. 22.—Relieving C.P.R. from providing further protection at crossing 150 yds., south of Spencerville station, Ont.

25817 to 25819. Jan. 23.—Approving Bell Telephone Co. agreement with Dereham Telephone Co. in Oxford and Elgin Counties, Ont., Jan. 5; Medonte Tp., Ont., Dec. 14, 1916; and Norfolk & Tillsonburg Telephone Co., Jan. 5.

25820. Jan. 22.—Relieving Canadian Northern Ry. from further protection of crossing near mileage 428, Battleford Subdivision, Sask.

Grand Trunk Railway Watch Inspectors' Meeting.

On Jan. 1, 1916, a change was made in the supervision of time service matters on the G.T.R., H. Hulatt, Manager of Telegraphs, assuming jurisdiction over them, succeeding Prof. C. H. McLeod, resigned. Mr. Hulatt, who had previously been Superintendent of Time Service, G. T. Pacific Ry., issued revised time service regulations on the G.T.R., effective May 8, 1916, they conforming very largely to those he had previously put into effect on the G. T. Pacific. A feature of the system is that the onus of reporting men delinquent is taken off the shoulders of inspectors, and the compilation of all reports and records centralized in one office.

With a view to increasing the efficiency of this branch of the railway service, a meeting of G.T.R. official watch inspectors was held in Montreal, Jan. 18 and 19, which was attended, with but few exceptions, by all inspectors, some 70 being present. The meeting was very successful, and proved of interest and value to those attending. Mr. Hulatt, in opening the proceedings, emphasized the fact that his great aim was to secure a thoroughly efficient service, thereby ensuring greater protection to the company's employes and patrons, and that this could only be attained by the heartiest co-operation between the inspectors and himself, honest and fair treatment of the employes by the inspectors, and the importance of ensuring that only first class work be done in connection with the cleaning and repairing of watches. He drew attention to the fact that in the official list of watches approved for service on the road, employes were given a selection of practically 100 different grades, made by standard well known manufacturers, and that neither he nor the G.T.R. was in any way interested as to what particular make of watch an inspector favored or pushed, provided it was one of the makes or grades scheduled in the official list, which complied in every respect with similar lists in force on all important roads in Canada and the United States. Numerous interesting subjects were discussed, among others, the matter of standard loaners, equitable prices to charge for cleaning and repairing watches, deduction order, etc. In connection with the preparing of reports, etc., W. E. Bell, chief clerk, and Miss Doyle, assistant in charge of Time Service Records Bureau, discussed with the inspectors the various forms and the proper preparation of same, with a view to securing the maximum accuracy.

The inspectors were the guests of the G.T.R. at luncheon on Jan. 18, when D. E. Galloway, Assistant to President, and C. R. Moore, Assistant to Vice President, in charge of Transportation, addressed the inspectors, stating that their work was appreciated by the management and had its hearty support.

At the close of the meeting, R. Hemsley of Montreal, one of the inspectors, presented to Miss Doyle, on behalf of the inspectors, a solid gold wrist watch, showing their appreciation for the preparation of reports, etc., and J. Striker, of Buffalo, thanked Mr. Hulatt for having called the convention, stating that it had established a personal relationship between the inspectors and the chief, which they all valued, and which would undoubtedly result in a very much more efficient service ,and that as a mark of their appreciation they had forwarded to Mrs. Hulatt a bouquet of roses. Mr. Hulatt, in thanking those present for their kindness to Miss Doyle, and also for the compliment paid to Mrs. Hulatt, expressed the pleasure it had been to meet all the inspectors, and said that all being wel, a similar meeting at some other point on the system would be held next year.

On Section 8, Shogomoc Subdivision, New Brunswick District, Canadian Pacific Railway.

The foreman of this section, Allan King, was awarded the General Manager's prize, in the track section competition on Eastern Lines, C.P.R., full particulars of which were given in Canadian Railway and Marine World for January, pg. 2.

Steam Railway Track Laid in 1916.

We have not been able to obtain any official information as to track laid on the three McArthur lines in Alberta. The total figures given in our January issue are amended below by omitting from the total the C.P.R. line to Camp Borden, Ont., 3.75 miles, and the G.T.R. line to Camp Borden, 4.21 miles, these lines being regarded as spur lines and not as permanent additions to mileage. We are officially advised that the estimate made of 2.75 miles of railway to the Intercolonial Ry.'s Halifax ocean terminals covered only construction track, it being proposed to lay permanent track during this year. There is also an alteration in the estimated figures given in the January table for the Alberta & Great Waterways Ry. It was expected when that table was prepared that track would reach McMurray by Dec. 31, but a statement by J. D. McArthur, President, reported recently, was that 80 miles of track still had to be laid before McMurray was reached. The table corrected as above stated follows:

	Miles.	Miles
***Alberta & Great Waterways Ry.—**		
Mileage 174.5 towards McMurray Alta		40.00
Canadian Northern Ry. System—		
Canadian Northern Quebec Ry., Arundel to Kaolin, Que.	9.00	
Canadian Northern Pacific Ry.—		
Victoria to Patricia Bay	13.72	
Victoria towards Alberni	1.00	
	14.72	23.72
Canadian Pacific Ry.—		
Pakowi to Manyberries, Alta.	10.40	
Stony Creek to Cambie	10.50	20.90
***Central Canada Ry.—**		
Heart River to Peace River Landing, Alta., M. 47.60 to M. 49.50		1.90
***Edmonton, Dunvegan & B.C. Ry.—**		
M. 336.9 to Spirit River, M. 357	20.10	
Spirit River to Grande Prairie Settlement, Alta.	48.50	68.60
Grand Trunk Pacific Ry.—		
Moose Jaw N.W. Branch M. 67 to 70	3.00	
Regina-Moose Jaw Branch to Elevator	2.65	5.65
Hudson Bay Ry.—		
Manitou Rapids, M. 241.24, to Kettle Rapids		91.00
Kettle Valley Ry.—		
To connect track ends in Coquihalla Valley, B.C.		1.70
Pacific Great Eastern Ry.—		
Clinton northerly towards Prince George, B.C.		15.17
Prince Edward Island Car Ferry—		
Connections at Port Borden, P.E.I.		1.00
Quebec & Lake St. John Ry.—		
Lorette to Huron River, Que.		10.00
Toronto, Hamilton & Buffalo Ry.—		
Dunnville to Port Maitland, Ont.		5.00
Vancouver, Victoria & Eastern Ry. & N. Co.—		
Completion of Sumas Landing—Connor Line	1.13	
Connection between Kettle Valley Lines and Canadian Northern Pacific Ry. at Hope, B.C.	0.17	1.30
Total		285.94

Track was laid during the year in seven Provinces, Alberta showing the largest mileage. Following is a comparison of new mileage with 1915 and 1914:

	1916.	1915.	1914.
Alberta	120.90	299.60	513.12
Manitoba	91.00	57.91	300.15
British Columbia	23.39	212.20	679.26
Quebec	19.00	16.00	52.51
Saskatchewan	5.65	107.12	215.97
Ontario	5.00	1.00	200.01
Prince Edward Island	1.00	....	2.50
Nova Scotia	....	57.91	500.15
New Brunswick	....	2.14	29.99
	285.94	753.88	2,493.66

The Canadian Northern Patriotic Association has been organized by C.N.R. employes to assist the Patriotic Fund.

Canadian Transportation Men, Engineer, Etc. in the War.

Railway and Forestry Battalion.—London, Eng., press dispatch. Jan. 7. "In connection with the combing out process now proceeding in the Canadian forces in England and at the base two labor battalions, two railway construction battalions and two forestry battalions have already been formed from men graded for permanent base duty."

The Engineers' Importance.—Capt. D. M. Mathieson, M.C., of the Canadian Engineers, who returned from France in December, in lecturing in Toronto recently, referred to the tremendous importance of the Canadian Engineers' work in that country. No work of importance, he said, could be carried on without their co-operation. So much responsibility, in fact, is placed on this branch of the service that an engineer subaltern in France is on a par with an infantry colonel, as far as power goes. The sappers are called upon to direct from 50 to 100 men and approximate to the position of a railway construction foreman in this country.

Canadians to Build Military Railways.—Ottawa press dispatch, Jan. 12. "Canada has been given complete charge of the whole of the allied railway construction on the western front. Lt. Col. J. W. Stewart, of Vancouver, is in command of this important work. In preparation for the spring offensive, Canadians are building hundreds of miles of road in France and Flanders. In connection with this work four new companies have been authorized in western Canada, one in each of the four western provinces. The Manitoba company will be commanded by Major Lanigan, son of W. B. Lanigan, Assistant Freight Manager, C.P.R., Winnipeg. The Saskatchewan company will be commanded by Major George Robinson, M.C. Capt. Geo. Gardiner and Capt. Fitzsimons will jointly raise the Alberta company, and the British Columbia company will be recruited by Major Marsh, contractor, New Westminster.

"The two new railway construction battalions recently authorized, 256th and 257th, will look after recruiting for eastern Canada. In addition, the 143rd Bantam Battalion of British Columbia and the 228th Overseas Battalion have been converted into railway construction corps, and will leave for overseas soon. It is understood also that a number of battalions have been created from the Canadian forces in England for this work. Altogether there probably will be 10,000 Canadians engaged soon on this important and vital operation."

Canadian Government Railways Help.—F. P. Gutelius, General Manager, issued the following circular, Jan. 15: "These railways are sending 300 miles of rails and 1,200 switches to the front to be used in the construction of a railway and the necessary terminals for the handling of supplies, munitions and men between the seaboard and the war zone. This railway is being built by and under the supervision of the Canadian Railway Construction Corps, and sufficient locomotives and cars are being sent from this side to equip same. The Army Council have asked for the assistance of the Dominion Government in manning this new military road in France, and the Canadian Government Railways are asked to supply 20 full crews, each crew to be composed of 1 engineer, 1 fireman, 1 conductor and 2 brakemen. In order that each superintendent's district may be represented I am asking the officers on each district to arrange for the recruiting of 2 crews. These men, of course, will be volunteers between the ages of 21 and 45. They will enlist as soldiers and undergo a brief period of military training, with the understanding that their employment will be the railway work above outlined, and with the further understanding that they will receive wages made up of military pay equal to their present pay, determined on the basis of 100 miles or 10 hours for each day that they are in military service; also that their seniority, Provident Fund and Insurance Association standing on these railways be maintained during their leave of absence on this most important work in which the road employes on these railways can render so great assistance to the Empire, and who will, I hope, form a body of men of which all employes on these railways will be justly proud."

127th Battalion.—Lce. Corp. Shadwell, of the 127th Battalion (York Rangers), writing from Camp Bordon, Hampshire, England, to the Telegram, says the battalion has made a good name for itself while training, since arriving in England on Aug. 30 last. It is no longer an infantry battalion, but a light railway engineering battalion. On Oct. 11, some 250 men were drafted to No. 1 Construction Battalion, France, and some have since been killed or wounded. After several moves the 127th reached Camp Bordon, and is now equipped with everything for transport and construction work, including 200 mules, trucks, cars, wagons and railway tools, ready to go anywhere.

143rd Railways Construction Battalion, C.E.F.—The 143rd Overseas Battalion, C.E.F. (Bantams), with headquarters at Victoria, B.C., was converted into a railway construction battalion on Jan. 7. It is commanded by Lt. Col. A. B. Powley, and will have a strength of about 1,000, all ranks.

The 228th Battalion, which was raised as a forestry battalion, has been changed to a railway construction one. It will be composed of about 1,000 men of all ranks. Its headquarters for the present are at Toronto, the commanding officer being Lt. Col. A. Earchman, who has already seen service at the front, and who was formerly engaged in construction on the Hudson Bay Railway. Several of his officers are engineers, and the men have been largely recruited from the railway employes and mining men of the North Bay and Sudbury district and along the National Transcontinental Railway.

The 239th Battalion Overseas Railway Construction Corps, under command of Lt. Col. J. W. Stewart, of Foley, Welch & Stewart, railway contractors, Vancouver, was officially reported on Dec. 28 as having arrived safely in England.

The 256th Railway Construction Battalion will be composed of about 1,000 men of all ranks. The commanding officer is Lt. Col. Walter McConnell, 43 Indian Road, Toronto. Four companies will be raised in Halifax, N.S., Montreal, Toronto and St. Catharines, Ont. The Montreal company will be commanded by F. L. C. Bond, B.A.Sc., A.M.Can.Soc.C.E., Division Engineer, G.T.R., Montreal.

The 257th Railway Construction Battalion, C.E.F., which will consist of about 1,150 officers and men, has its headquarters at 405 Wellington St., Ottawa, and is being raised by Lt. Col. T. L. Martin, of O'Brien & Martin, railway contractors, Renfrew, Ont. Among the other officers are Major A. D. Watts, A.M.Can.Soc.C.E., Toronto; Major Leslie Thompson, railway contractor; Major C. F. Harrington, M.Can.Soc.C.E., Ottawa; Major Bob Herron, a Timiskaming lumberman, who has specialized in railway bridge building; and Adjutant W. G. Fellows, of the N.C.G.A., Quebec.

No. 1 Section, Skilled Railway Employes, is being organized to operate 300 miles of double track railway which is now completed in the northern part of France. A. H. Kendall, heretofore Master Mechanic, C.P.R., has been appointed Captain, and T. A. Ross has been appointed Captain, Paymaster and Acting Adjutant. The headquarters are at Guy St. Barracks, Montreal. The unit will be made up entirely of skilled railway employes. The staff will consist of: Captain, officer commanding; Captain, Paymaster; Adjutant; two lieutenants, one of which will have the qualification of a railway divisional superintendent, and the other the qualification of a divisional master mechanic. There are many applicants for the two lieutenancies from most reliable railway officials, and the appointments will be posted later, as the greatest care must be exercised in the choice, as competence in railway operation being the qualification required. The non-commissioned officers will be appointed after mobilization in barracks, the promotions being awarded in accordance with efficiency. The unit is to be recruited from all the Canadian railways, and it is expected that as only the most efficient will be accepted, the unit should give a good account of itself. The immediate requirements are: 96 locomotive men, 96 locomotive firemen, 54 locomotive mechanics, 4 experienced yardmasters, 16 experienced blockmen and stationmasters. A special working pay will be given in addition to the regular military pay of from 60 cents to $1 a day. Separation allowance will also be given to those entitled to it, the minimum being $20 a month. As this is a non-combatant unit, it is an opportunity for those to serve who wish to be engaged at their own vocation with a limited amount of military training. The uniforms will be identical with those of the infantry regiments, and the military drill order will be modified to meet only the requirements and to keep the men in good physical condition. It is expected that after this section is recruited three additional sections will be recruited, so as to make a complete battalion.

Capt. H. W. Palmer will recruit a company in St. Catharines, Ont., for one of the new railway construction batalions.

Lieut. A. J. Motyer, B.A.Sc., who has been killed in action, was a Rhodes scholar, and was formerly with Canadian Westinghouse Co.

Capt. T. A. Hiam, formerly private secretary to Sir Donald Mann, Vice President, Canadian Northern Ry., is adjutant of the 198th Battalion (Buffs), which is now at Toronto, and has been warned for overseas service.

Capt. the Hon. W. J. Shaughnessy, only surviving son of Lord Shaughnessy, is Adjutant of the Duchess of Connaught's Own Irish Canadian Rangers of Montreal, now touring in Ireland, preparatory to going to France.

Brevet Col. G. P. Murphy, Canadian Army Service Corps, Vice President, Ottawa Transportation Co., Ottawa, Ont., who has a staff appointment in England.

has been created a Companion of the Order of St. Michael and St. George.

Major and Brevet Lt. Col. Temporary Brigadier, D. S. MacInnes, D.S.O., Royal Engineers, who has been created a Companion of the Order of St. Michael and St. George, is a brother of W. R. MacInnes, Freight Traffic Manager, C.P.R.

J. W. Kennedy, chief clerk, Vice President's office, C.P.R., Montreal, has left for overseas service. He will be attached to the staff of Lt. Col. C. W. P. Ramsey, Canadian Overseas Railway Construction Corps, as lieutenant.

Capt. R. F. Morkill, Signal Engineer, G.T.R., Montreal, who is on leave of absence for military service and is commanding the 209th Field Company, 34th Division, Royal Engineers, has been promoted to Major for services in the field.

Lieut. Guy Dunstan, attached to the 11th Border Regiment, who had been missing since July, 1916, was officially reported, early in January, to have been killed in action. He was son of Kenneth Dunstan, Manager, Bell Telephone Co., Toronto.

Lieut. H. A. Yates, son of G. W. Yates, Secretary to the Minister of Railways, who has been with the Mechanical Transport at Camp Niagara and Camp Borden, and latterly at Exhibition Camp, Toronto, has transferred to the Royal Naval Air Service and gone overseas.

Lt. Col. G. S. Cantlie, formerly General Superintendent, Car Service, C.P.R., who was given leave of absence on Jan. 8, 1915, to accompany his regiment, the 5th Regiment, Royal Highlanders of Canada, overseas, and who has been made a member of the Distinguished Service Order, is at present in Montreal, having been wounded in the arm.

Lt. Col. T. L. Martin, who is raising the 257th Railway Construction Battalion, with headquarters at Ottawa, is a member of the firm of O'Brien & Martin, Renfrew, Ont. Starting as a rodman on the Timiskaming & Northern Ontario Ry., he became Resident Engineer, and then went into contracting, his firm having had large contracts on the National Transcontinental Ry. and also on the Quebec & Saguenay Ry.

Major G. A. E. Bury, Deputy Assistant Quartermaster General of the Training Division, C.E.F., son of George Bury, Vice President, C.P.R., has transferred from Brighton to Witley Camp, Surrey, Eng.

A London, Eng., press dispatch of Dec. 29 says Major J. B. Harstone, D.S.O., general list; Lieut. J. G. Fordham, general list, and Major C. L. Hervey, Canadian Engineer, have reported for duty with the Canadian railway troops organization.

Major A. D. Watts, who is second in command of the 257th Railway Construction Battalion, now being raised, with headquarters in Ottawa, is an honor graduate of the Royal Military College, Kingston, Ont., and an Associate Member, Canadian Society of Civil Engineers. Among other engineering work, he was engaged on the Brantford & Hamilton Ry. construction, was with the Hydro Electric Power Commission of Ontario, and was also engaged on a number of power developments.

Lieut. L. W. Klingner, who has been given the Military Cross "for showing great courage when in charge of a working party under heavy fire," is a Torontonian, 29 years old, and a science graduate of Toronto University, 1907. He was for some time in the C.P.R. Construction Department, particularly in the Smiths Falls district. He received his commission in the Canadian Engineers in Jan., 1915, went overseas in Feb., 1916, and to France in July, 1916, with the 10th Field Company.

Lt. Col. J. J. Creelman, of the Field Artillery, Canadian Expeditionary Force, who has been made a member of the Distinguished Service Order, and also of the Russian Order of St. George, is a son of the late A. R. Creelman, K.C., at one time General Counsel, C.P.R.. and a director of that company. He is a partner in the firm of Casgrain, Mitchell, Holt, McDougall, Creelman & Stairs, advocates, barristers, etc., Montreal. He is said to be the youngest artillery brigade commander in the service, being only 35.

Sapper W. H. G. Firkins, whose next of kin are at Worcester, Eng., and who was reported in the Jan. 22 casualty list from Ottawa as having been wounded, was one of the party of the 12th Field Company, Canadian Engineers, which went out on the night of Nov. 25, under Lieut. Bruce H. A. Burrows, of Toronto, to put up barbed wire at what the officer commanding subsequently wrote of as "a very important strategical point." On the way into the work Lieut. Burrows, who was going ahead of his men to reconnoitre, was killed by a high explosive shell, but none of the others was injured.

G. P. MacLaren, A.M.Can.Soc.C.E., who has been transferred from No. 2 Construction Battalion to the 256th Railway Construction Battalion, with the rank of Major, was associated with railway construction work under Mackenzie, Mann & Co. in Nova Scotia, Quebec and Ontario for 17 years. On the completion of the Canadian Northern Ry. between Pembroke and Sudbury, Ont., he was appointed Division Engineer, Mackenzie, Mann & Co., North Bay, Ont., and from Sept., 1915, until the organization of No. 2 Construction Battalion recently, he was Division Engineer, Toronto District, C.N.R., Toronto. He was a captain in No. 2 Construction Battalion.

Lieut. C. S. L. Hertzberg, A.M.Can.Soc. C.E., of James, Loudon & Hertzberg, engineers, Toronto, who is in the Canadian Engineers at the front, has been given the Military Cross, for digging trenches under heavy fire and establishing a strong point on an exposed flank. He is a son of A. L. Hertzberg, M.Can.Soc.C.E., Division Engineer, C.P.R., Toronto. His two brothers, Major H. F. H. Hertzberg, Jr. M. Can.Soc.C.E., and Lieut. O. P. Hertzberg, are also at the front. The former received a similar decoration about a year ago. The latter, who enlisted as a private, and was promoted to lieutenant, was wounded, and returned home on leave last summer, being transferred subsequently to another unit.

Major W. G. Tyrrell, of the Royal Engineers, son of Dr. J. D. Tyrrell, Toronto, has been mentioned in dispatches for gallantry during the engagement which completely routed the Turkish Third Division on its march towards the Suez Canal. After graduating at the Royal Military College, Kingston, Ont., he was appointed a second lieutenant in the Royal Engineers. He was subsequently loaned to Canada, and after five years service here, returned to England in 1913. When war broke out he went to France, and after spending some months there, was given a staff appointment in England, subsequently being sent to Egypt, where he built about 100 miles of railway at a rate of over a mile a day.

Lieut. H. G. Pepall, who has returned to Toronto, suffering from wounds, is a son of Geo. Pepall, Assistant Foreign Freight Agent, G.T.R., and representative of the National Despatch-Great Eastern Line. He went overseas in June, 1915, with a draft from the 37th Regiment. After arriving in England, he was sent to the Military School at Hythe, and after passing the examinations there, was made Machine Gun Instructor of the Canadian Machine Gun School at Shorncliffe. He went to France in January, 1916, and was appointed Machine Gun Officer of the 15th Battalion, 48th Highlanders, which position he filled until June, 1916, when he was placed in charge of No. 4 Company and recommended for a captaincy. Unfortunately he was wounded by shrapnel before he was gazetted, the elbow of his left arm being shattered, as well as his left leg. His leg is improving, but his arm will be practically useless.

Major C. T. Trotter, officer commanding 12th Field Company, Canadian Engineers, now forming part of the 4th Canadian Division in France, who has been mentioned in dispatches recently by Field Marshal Sir Douglas Haig, graduated at the Royal Military College, Kingston, in 1907, with honors, and after a two years science course at McGill University, Montreal, graduated there with the degree of B.A.Sc. He was then appointed Electrical Engineer, Militia Department, Ottawa, where he joined the 4th Company, Canadian Engineers, as a lieutenant. In 1912 he was employed by Standard Clay Products, Ltd., of St. Johns, Que., of which his father, W. C. Trotter, Major (reserve of officers), Canadian Artillery, is President and General Manager, to design a sewer pipe factory for the company at New Glasgow, N.S. On the outbreak of war he volunteered and was sent to Halifax, N.S., where, as a lieutenant, he constructed some defence works. In Nov., 1914, he was appointed Captain, 4th Field Company, Canadian Engineers, and went to England in April, 1915, and to Flanders in Sept., 1915, with the 2nd Canadian Division. He was on the Ypres salient until July, 1916, when he was appointed a Major and given command of the 12th Field Company, Canadian Engineers, 4th Canadian Division, proceeding with them to Belgium in Aug., 1916, and afterwards being transferred with them to France. Bruce H. A. Burrow, of Toronto, who was killed in action, Nov. 25, was a lieutenant in this company. Major C. T. Trotter's brother, Major Harold L. Trotter, is in command of the 11th Field Company, Canadian Engineers, 4th Canadian Division.

Manitoba's Railway Report.—The railway report presented to the Manitoba Legislature, Jan. 16, by the Premier showed that the total mileage of railways in the province at Dec. 31, 1916, was 4,672.52. During 1916 the government paid to the Canadian Northern Ry., out of the proceers in the hands of the Provincial Treasurer of certain stock issues guaranteed by the province, $183,430 on account of the completion of the line from Grand Marais to Victoria Beach, 14.11 miles. The report also stated that interest on all the C.N.R. debenture and stock issue securities was met by the company, the province not being called upon to liquidate any portion of the guarantee C.N.R. stock and bonds for $25,502,873.33 are guaranteed by the province.

The Brotherhood of Railroad Trainmen, Western Lines, C.P.R., elected its officers, Jan. 12, for the next biennial period, as follows: Chairman, E. H. Cooke, Moose Jaw, Sask.; Vice Chairman, W. G. Baker, Moose Jaw; Secretary, Jas, McLaughlin, Calgary, Alta.

Canadian Northern Railway Officials' Tribute to William Phillips.

On the eve of leaving the C.N.R.'s service recently, to enter that of the Cunard Steamship Co., William Phillips, Freight Traffic Manager, Eastern Lines, C.N.R., was entertained at dinner at the Albany Club, Toronto, by a number of the company's other prominent officials, the function being a spontaneous and enthusiastic tribute to his colleagues' esteem of him.

D. B. Hanna, Third Vice President, who presided, presented Mr. Phillips, on behalf of his associates, with a splendid cabinet of silver and paid a striking tribute to his many fine qualities, and to the splendid service he had given to the C. N. R. He traced in a most interesting manner the remarkable expansion of the system in the past 20 years, dwelling upon the various epoch marking events in its history and the evolution of the present system of over 8,000 miles. Mr. Phillips, in replying, expressed his deep regret at leaving the company, and the officials with whom he had worked for so many years.

W. H. Moore, Secretary of the Company, spoke of the high esteem in which Mr. Phillips is held by all the officers, and said that it was the earnest hope of every one present that the time would come when he would be again connected with the company.

F. H. Phippen, K.C., Chief Counsel of the company, alluded to the advantageous alliance that had been consummated between the C.N.R. and the Cunard Co. as the result of negotiations carried on by Mr. Phillips in England, and said it was a splendid tribute to Mr. Phillips' integrity and ability that the Cunary directors had sought his services to represent them in Canada, and that it was a good augury for the relations between the two companies.

Among other speakers were G. H. Shaw, General Traffic Manager, C. Price Green, Scott Griffin and Noel Marshall.

Mr. Hanna's health was proposed by Mr. Moore, who alluded with feeling to the remarkable loyalty and affection felt by all the officers for the veteran Third Vice President, who had so successfully directed the company's destinies and operations since its inception, and expressed the hope that he would live for many years to enjoy the well-earned fruits of his labors.

The committee in charge of the arrangements for the dinner were: R. C. Vaughan, Assistant to Third Vice President; L. W. Mitchell, Treasurer and Purchasing Agent; E. W. Oliver, Assistant Engineer; and T. J. McCabe, Registrar and Transfer Agent. F. J. Buller, Paymaster, contributed to the musical programme.

Wm. Phillips was born in Toronto Jan. 31, 1870, and entered transportation service Apr., 1886, since when he has been, to Mar. 31, 1896, in G.T.R. offices, Toronto; Apr. 1, 1896, to Feb. 28, 1902, Northwest Agent, Northwest Transportation Co., Winnipeg; for a portion of this time he was also General Agent, Chicago Great Western Ry., and from Apr. 1, 1900, also Northwest Agent, Northern Navigation Co.; Mar. 1, 1902, to May, 1911, General Eastern Agent, C.N.R., Toronto; in Nov., 1906, he was also appointed General Freight and Passenger Agent, Canadian Northern Ontario Ry., and in Apr., 1910, also acting Traffic Manager, Canadian Northern Steamships, Ltd., and in Apr., 1911, this last position was changed to General Freight and Passenger Agent, Canadian Northern Steamships, Ltd.; May, 1911, to May, 1912, he was General Freight Agent, Canadian Northern Ontario Ry., Central Ontario Ry., Bay of Quinte Ry., Irondale, Bancroft & Ottawa Ry., and Niagara, St. Catharines & Toronto Ry. and Navigation Cos., and also General Freight and Passenger Agent, Canadian Northern Steamships, Ltd.; May, 1912, to Nov., 1914; European Traffic Manager, C.N.R., London, Eng., Nov., 1914, to Sept., 1916, when the Canadian Northern Steamships, Ltd. was absorbed by the Cunard Steamship Co., European Railway and Steamship Manager, C.N.R., and Canadian Northern Steamships, Ltd.; Dec. 1 to Dec. 31, 1916, Freight Traffic Manager, lines east of Port Arthur, C.N.R., Toronto.

William Phillips
Formerly Freight Traffic Manager, Eastern Lines, Canadian Northern Railway, now Canadian Representative, Cunard Steamship Co.

Canadian Society of Civil Engineers, Saskatchewan Branch.—It has been felt for some time by members of the society in Saskatchewan that a closer co-operation is necessary, also a centre for the members of easier access to them than the headquarters of the society at Montreal. With the unanimous consent of all members in the province, it is suggested to extend the scope of the Regina Branch to include all members of the engineering profession in Saskatchewan and change the name to Saskatchewan Branch. An organization meeting at Regina recently elected L. A. Thornton as chairman and J. N. deStein as secretary, and L. A. Thornton and H. S. Carpenter, of Regina; G. D. Mackie, Moose Jaw; C. J. Yorath, Saskatoon, and R. W. Ross, Melville, were elected a nominating and organizing committee. They will convene in the very near future, when the organization and the outlines of the general policy of the branch will be decided upon, after sanction of the society's council in Montreal has been obtained.

The Death of Thomas Malcolm.

Thos. Malcolm, of Campbellton, N.B., who died at his brother in law's house at Bathurst, N.B., Jan. 10, was well known as a railway contractor, etc., throughout Canada. He was born in Campbellton in 1854, and during the construction of the Intercolonial Ry. through that district, he joined the construction crew as water boy, working up to timekeeper. When that section was completed he joined the engineering staff, under the late W. D. Barclay, and acted as chain man, working practically all along the line from Halifax to Riviere du Loup. Then he went to the Black Hills, Nevada, and engaged in mining contracting. From there he went to Winnipeg, where he met the late Duncan Ross and formed the Malcolm and Ross partnership. They got a subcontract for timber construction on the C.P.R., and on completing it took a subcontract for bridge work on section B, Canadian Pacific Ry. from Manning Macdonald & Co., who had a contract from the Dominion Government for building the section between Hawk Lake and Rat Portage, Ont. On the completion of this work, Malcolm & Ross removed to Ottawa, and later took a contract for railway construction in the Muskoka district of Ontario, and afterwards did some city work in Ottawa. Subsequently they visited Panama, with the intention of taking a contract but decided not to do so.

Their next work was building between 75 and 100 miles of the Temiscouata Ry., and after that they built some sections of the Bangor & Aroostook Rd. in Maine. While engaged in the latter work they conceived the idea of building a line across northern New Brunswick, from Campbellton to St. Leonard, with a bridge across the St. John River to Van Buren, Me., to connect with the Bangor & Aroostook Rd., and secured a charter for the Restigouche & Western Ry. Co. Mr. Ross died soon afterwards, but Mr. Malcolm went on with the construction, and after surmounting many difficulties he succeeded, in 1910, in completing the line, the name of which had in the meantime been changed to International Ry. of New Brunswick. Since July 31, 1914, it has been operated as an Intercolonial Ry. branch, the Dominion Government paying rental based on interest on an agreed price at which it may be taken over within the next three years.

Mr. Malcolm was a remarkably rugged man and enjoyed excellent health until some two years ago. In Dec., 1915, he underwent a serious operation in New York and never recovered his health. He was able to be up for about two months last summer but had practically been confined to bed since September last. He married Miss Babin, of Edmundston, N.B., who survives him, as also do their daughter, Mrs. Roland Moffatt and three sons, two of whom are lieutenants in the C.E.F., one being overseas and the other at home from the front on sick leave. The attendance at the funeral testified to the deep affection in which Mr. Malcolm was held. A large number of Campbellton citizens went to Bathurst by special train and returned by it with the body to Campbellton, where the burial took place.

The C.P.R. has removed its Liverpool Eng., offices from the Royal Liver Building to 6 Water St., the offices hitherto occupied being transferred by Canadian Pacific Ocean Services, Ltd.

The Western Canada Railway Club, with headquarters at Winnipeg, has ceased to exist.

Freight and Passenger Traffic Notes.

The C.P.R. is operating its transcontinental traffic through the Connaught tunnel at Rogers Pass, B.C., instead of via Glacier, as formerly.

It is expected that the freight congestion on the railways will be so relieved that the normal passenger traffic will be restored after May 1.

The G. T. Pacific Coast Steamship Co.'s s.s. Prince Rupert, during 1916 on the Skagway run, travelled 50,418 miles and carried 8,600 passengers.

The C.P.R. opened an up-town ticket office in the Hotel Vancouver, Vancouver, Jan. 2, W. S. Stewart, formerly of Victoria, being placed in charge.

J. P. Mader, General Freight and Passenger Agent, Algoma Eastern Ry., has been authorized to prepare and issue tariffs for all the company's traffic on its railways and in its vessels.

A deputation from Quebec waited on Lord Shaughnessy at Montreal, Jan. 10, asking that the Chateau Frontenac be enlarged, claiming that the present accommodation is inadequate. Consideration was promised.

A Quebec Superior Court gave a verdict, Jan. 9, for $107.75 in favor of H. McAvoy against the G.T.R. for the loss of a travelling bag and contents which had been checked in the company's parcel office, Montreal.

The C.P.R. is providing through its dining car department a train basket lunch service, which is operated in connection with its dining cars, and enables passengers who do not desire a regular meal to obtain a light one with tea or coffee.

The Moncton & Buctouche Ry.'s Standard Freight Mileage Tariff C.R.C. no. 23 has been approved by the Board of Railway Commissioners, subject to the condition that the 5th class rate for the 11-15 mile group be reduced from 7 to 6c per 100 lb.

Certain interests in Hamilton, Ont., are agitating in favor of an application being made to the Board of Railway Commissioners for an order directing that the C.P.R. and the G.T.R. make their tickets between Toronto and Hamilton interchangeable. The proposal, however, does not meet with the Hamilton Board of Trade's approval.

The G.T.R. has issued for its agents adhesive tags which are being placed on all letters sent to shippers of freight. They have printed on them: "Important! Business requires all concerned to keep cars moving. Help us to help you. Kindly load or unload cars immediately regardless of free time limit. This will help our car supply and help you. Let's help each other."

The Northern Pacific Ry. has issued a circular to shippers in Vancouver, B.C., to the effect that cars will be withheld from firms which do not load them to capacity. The N.P.R. says that with the co-operation of shippers in regard to the full loading of cars it would be possible for it to show an increase of 10% in one month in the average loading of cars now employed.

The Canadian Northern Pacific Ry. is making use of its car barges, operated on the Fraser River and adjacent waters, for the collection and distribution of freight at any point where traffic may be found. It is reported that a considerable business is being developed, and that it can be economically conducted. Factories having water front facilities are thereby given connection with the Canadian Northern lines although they may be miles away.

A joint circular has been issued by transportation lines in Eastern Canada directing railway and steamship agents to carefully observe the regulations as to the issue of half fare tickets for children, between 5 and 12 years of age, and instructing conductors and pursers to collect half fares for children apparently over years for whom no tickets are presented, and full fares for children apparently over 12 for whom half fare tickets are presented.

The Canadian Northern Ry. during 1916 carried 189,427 tons of coal from the Northern Alberta coal fields against 111,236 tons in 1915, and about 200,000 tons from the Drumheller collieries in Southern Alberta, against less than 100,000 tons in 1915. The total output of all the Alberta coal fields for 1916 was reported at Ottawa to be 4,400,000 tons, of which the fields tributary to Edmonton produced 904,493 tons, and the Brazeau and Jasper Park collieries 223,678 tons.

Navigation between Point du Chene, N.B., and Summerside, P.E.I., was suspended for the season, Dec. 30, in consequence of which a new train schedule was put in operation on the Intercolonial Ry.'s Point du Chene branch, Jan. 1. Trains leave Moncton at 10.25 a.m., 6.15 and 10 p.m., and Point du Chene, 5.55 and 7.35 a.m., 1.05 and 3.30 p.m. Commencing Jan. 11, all railway traffic for Prince Edward Island was diverted to Pictou, N.S., to be transferred to Georgetown by steamship leaving Mondays, Wednesdays, and Fridays at 7 a.m., and returning from Georgetown, Tuesdays, Thursdays and Saturdays at the same hour.

Railway Finance, Meetings, Etc.

Boston and Maine Rd.—A U. S. Federal Court, sitting at Boston, Mass., Jan. 6, after a hearing extending several weeks, dismissed the minority stockholders suit subject to the final determination of a point of law, against the appointment of a receiver for the company.

A Boston, Mass., dispatch, Jan. 8, says: A bill to repeal the Legislative Act of 1915, authorizing the reorganization of the Boston & Maine Rd. has been filed by Representative Frost, of Somerville, who announced that later he would present a bill to authorize the State to purchase the majority holding of B. & M. Rd. common stock, owned by the New York, New Haven & Hartford Rd., but now administered by Federal trustees."

Canadian Northern Ry.—There has been deposited with the Secretary of State at Ottawa duplicate of trust agreement, dated Jan. 10, between the company and the Central Trust Co., New York, as trustee, securing an issue of 6% gold notes.

Diamond Coal Co.—A meeting of the debenture holders will be held in Calgary, Alta., Feb. 5, to consider and ratify an option given by the liquidator on the company's property and assets or otherwise to arrange for the disposal of the property. The company owns a 6 mile railway from its collieries at Diamond City to a junction with the C.P.R. at Kipp, which was built in 1909, and to which was added some mileage of sidings in 1912-13.

Timiskaming and Northern Ontario Ry.—Passenger earnings, Nov., 1916, $55,039.83, against $46,142.17 for Nov., 1915. Freight earnings, Nov., 1916, $105,798.07, against $99,897.65 for Nov., 1915.

White Pass & Yukon Route.—Gross earnings from Jan. 1 to Nov. 14, 1916, $1,825,302, against $1,454,989 for same period, 1915.

Reduction of Passenger Train Service to Relieve Freight Congestion.

To carry into effect the Board of Railway Commissioners' order, which appears on pg. 48 of this issue, the principal railways made sweeping temporary reductions in their passenger train service east of the Detroit and St. Clair Rivers and Lake Superior on Jan. 14, as follows:

The C.P.R. cancelled 60 trains on its Eastern lines, viz: Farnham Division, 7; Laurentian Division, 7; Ottawa and Smiths Falls Divisions, 15; Smiths Falls and Sudbury Divisions, 2; Bruce and Sudbury Divisions, 2; Smiths Falls and Trenton Divisions, 8; Toronto, Hamilton and Buffalo service, 9; London Division, 10. On the Smiths Falls and Trenton Divisions 2 new trains have been put on, making a net reduction of 58.

The G.T.R. cancelled 61 trains, viz.: Portland-Montreal, 6; Levis-Richmond, 2; Montreal-Toronto, 4; Ottawa-Pembroke-Madawaska, 2; Montreal-Ottawa, 2; Coteau Junction-Valleyfield-Swanton, 2; Toronto-Hamilton-Suspension Bridge - London, 10; London-Port Huron, 1; London-Windsor-Detroit, 2; Hamilton-Jarvis-Port Dover-Port Rowan-St. Thomas, 2; Stratford-Port Huron, 6; Stratford-Goderich, 2; Hamilton-Harrisburg-Guelph-Palmerston, 5; Palmerston-Durham, 1; Stratford-Port Dover, 2; London-Wingham, 2; Hamilton-Allandale, 2; Toronto-North Bay, 2; Allandale-Meaford, 2; Allandale-Midland-Penetang, 4.

The Canadian Northern cancelled 29 trains on its Eastern Lines, viz.: La Tuque Subdivision, 2; Batiscan & Chicoutimi, 6; Montford Subdivision, 2; Joliette Subdivision, 6; Laurentian Subdivision, 2; Hawkesbury Subdivision, 2; Brockville Subdivision, 2; Picton Subdivision, 1; Maynooth Subdivision, 2; Muskoka Division, 2; Orillia Subdivision, 2. The two trains cancelled on Orillia Subdivision leave it without any passenger service.

The Intercolonial, while not under the Board of Railway Commissioners' jurisdiction, has also made considerable reductions. The two daily through trains each way between Halifax and Montreal, the Ocean Limited and Maritime Express, are being continued but the running times have been lengthened, so as to enable them to handle more local business. On Jan. 25, 14 trains were cancelled, viz.: Halifax and Truro, 2; Point Du Chene and Moncton, 2; St. John and Moncton, 2; Newcastle and Campbellton, 2; Campbellton and Levis, 2; St. Leonard Jct. and Montreal, 2; Levis and Montreal, 2. It is said that this will make a total saving of approximately 20,000 miles a month, or 19% of the present I.R.C. traffic.

Car Shortage Situation in United States.—Washington, D.C., press dispatch, Jan. 20: "Drastic regulations designed to relieve the shortage in coal cars and help bring about a lowering of present high prices of coal were prescribed today by the Interstate Commerce Commission. The regulations require return to original ownership of all coal cars as fast as unloaded, and give the railways 10 days to devise methods for relieving the shortage in other types of cars. The commission's order also requires the railways to apply the same regulations to refrigerator, heated, ventilated and insulated cars."

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Canadian Government Railways' Coal Supply.

An order in council was passed at Ottawa, Jan. 14, authorizing the Canadian Government Railways to expend $300,000 additional on coal. This has been made necessary owing to the increased traffic on the Intercolonial and the decreased output from the Nova Scotia and New Brunswick mines, from which the railway's coal is usually obtained. The regular storage piles at the railway depots have been depleted to the extent of 14,500 tons, and 150 cars of commercial coal have been requisitioned to make up the shortage. The contracts for coal with the Canadian colliery owners amounted to about 1,000,000 tons, the prices running from $3.40 to $3.65 a ton. The government advised the mine owners that it was prepared to meet them in the way of an increased price if the output would be augmented, but with it all the railway management was faced with an apparent shortage in the coal supply of about 50,000 tons up to Mar. 31. The management decided that it would not be right to confiscate any further coal in transit for commercial purposes, and that in order to provide the necessary fuel for the locomotives coal would be purchased in the U.S. It is anticipated that this coal will cost about $10 a ton delivered.

Grain Inspection at Western Points.

The following figures compiled by the Trade and Commerce Department show the number of cars of grain inspected on railways at Winnipeg and other points on the Western Division, for Dec., 1916, and for the four months ended Dec. 31, compared with those inspected for the four months ended Dec. 31, 1915:

	Dec. 1916.	4 months to Dec. 31, 1916.	4 months to Dec. 31, 1915.
C.P.R.	16,153	64,342	103,210
C.P.R., Calgary .	828	2,536	2,238
C.N.R.	7,731	31,695	50,830
G.N.R.	77	615	2,576
G.T.P.R.	3,783	12,955	25,819
Totals	28,572	112,143	184,673

George Bury's Movements.

George Bury, Vice President, C.P.R., who, as stated in Canadian Railway and Marine World for January, arrived in Liverpool, Eng., Dec. 21, went from there to London, where he was met by his son, Major G. A. E. Bury, Deputy Assistant Quartermaster General of the Training Division, C.E.F. He went over to France for a few days, visited the Somme front and reached St. John, N.B., on the s.s. Scandinavian, Jan. 13, and Montreal, Jan. 15. He was accompanied to England by Mrs. and Miss Bury,, who returned with him. On Jan. 17, he insepcted the C.P.R. Montreal-Toronto line from Montreal to Smiths Falls, anl left Montreal again on Jan. 23 for New York, en route to England on business.

An Ottawa press dispatch of Jan. 29 said that Mr. Bury had "been appointed to go to Russia and take charge of the entire railway system supplying the Czar's troops with food and munitions."

A Montreal press dispatch of the same date said that C.P.R. officials there stated that Mr. Bury had gone to England on the company's shipping business.

Lord Shaughnessy issued the following statement in Montreal, Jan. 30: "As the C.P.R. is handling large quantities of Russian freight via Vancouver and Vladivostok, it was thought desirable that an official of the company should visit Russia with a view to acquiring such geographical and other information as might be of service in dealing with transportation problems, and Vice President Bury decided to go himself."

The Rogers Pass Tunnel Suit.

Judgment was given at Vancouver, B.C., June 30, 1916, fixing the damages to be paid to McIlwee & Sons, Denver, Col., in the action brought by them against Foley, Welch & Stewart for breach of contract in connection with the boring of the Rogers Pass tunnel on the C.P.R. The amount of damages awarded was $576,155.98. On July 12 the defendants were granted leave to appeal against the amount of the damages on condition that $600,000 be deposited in court to cover damages and costs. An accepted cheque was afterwards paid into court. The plaintiffs, however, were not satisfied with this, and initiated proceedings garnishing the C.P.R. in order to attach funds due on account of the tunnel construction and payable to Foley, Welch & Stewart. This firm secured a decision in the British Columbia Supreme Court setting aside the garnishee order, and the matter was taken to the Court of Appeal by McIlwee & Sons. On Jan. 4, the latter court, with one judge dissenting, reversed the Supreme Court's decision and upholding the garnishee. Pending the hearing of the appeal against the amount of damages, McIlwee & Sons are secured by the deposit in court of the accepted cheque for $600,000 and the garnishee order preventing the C.P.R. paying out money in its hands due to Foley, Welch & Stewart on account of the tunnel construction.

Sir William Van Horne's Will.—Sir Wm. Van Horne, K.C.M.G., who died in Montreal Sept. 11, 1915, left the following specific bequests: To his widow, Lady Van Horne, his house on Sherbrooke St. West, Montreal, with his very valuable art collection and an annuity of $30,000 a year. To his daughter, Miss Adeline Van Horne, his summer house and estate, Covenhoven, St. Andrews, N.B. To his grandson, W. C. T. Van Horne, $200,000, which is placed with the Royal Trust Co. until the boy becomes 21 years of age. The residue of the estate is left, one third each, to Lady Van Horne, Miss Van Horne, and his son, R. B. Van Horne. The will was probated in Winnipeg recently, the Winnipeg estate including 3,000 shares Winnipeg Electric Ry., valued at $350,000, and 3,955 acres of farm land at East Selkirk, valued at $98,893.50, the buildings being valued at $20,000 and the live stock at $25,015.

Canadian Society of Civil Engineers.—At the concluding of the society's annual meetings at Montreal, Jan. 24, the following officers were declared elected for the current year: President, J. S. Dennis, Montreal; Vice Presidents, J. M. R. Fairbairn and C. N. Monsarratt, Montreal; other members of the council, A. R. Decary, Quebec; J. H. Kennedy, Vancouver; H. Longley, St. John; G. A. McCarthy, Toronto; W. Pearce, Calgary; R. A. Ross and J. C. Smith, Montreal; and Jas. White, Ottawa.

Railway Enquiry Commission. — The Prime Minister stated in the House of Commons, Jan. 23, that the report of the commission, of which A. H. Smith, President, New York Central Rd., is Chairman, would not be ready for some weeks, possibly not before March.

Railway Rolling Stock Notes.

The Italian Government is reported to be enquiring for prices for 4,000 freight cars for the state railways.

The C.P.R. has received 399 box cars from its Angus shops, making a total of 870 of this type recently received.

The Canadian Northern Ry. has received 600 box cars, nos. 30300 to 31498, from Haskell & Barker Car. Co.

The Algoma Eastern Ry. is reported to be contemplating the purchase of a number of steel hopper or gondola cars.

Canadian Government Railways have ordered 50 wood flat cars to be built at the Moncton shops, N.B., and have purchased two 100 ton wrecking cranes from F. H. Hopkins & Co.

The French Government is reported to be enquiring for prices on about 20,000 freight cars, and to have placed an order with Eastern Car Co. for 3,000 of this lot.

The British Government is reported to have ordered 125 freight locomotives at an approximate cost of $2,750,000, to be delivered during 1917, from Baldwin Locomtive Works.

The French Government is reported to have ordered 100 consolidation locomotives from American Locomotive Co. for the government railways, for delivery in Jan. and Feb., 1918.

Canadian Government Railways, between Dec. 15 and Jan. 15, received 9 mikado locomotives from Canadian Locomotive Co.; and 30 steel frame box cars, 50 tons capacity, from Canadian Car & Foundry Co.

The French Government is reported to be making enquiries for prices for building of about 20,000 freight cars, and it is stated to be probable that some large orders will be placed in Canada and the U. S. shortly.

The C.P.R. has ordered 65 steel underframe box cars, 40 tons capacity, making a total of 310 now on order; 1 automobile furniture car, 40 tons capacity; 1 freight refrigerator car, 30 tons capacity, and 1 stores supply car, to be built at its Angus shops.

The C.P.R. is contemplating adding a number of Pacific type locomotives to its rolling stock, for which plans, etc., are being tentatively prepared, and the Engineering Department is working on the question of bridge stresses in connection therewith.

The British Government has ordered through the Imperial Munitions Board, from the Canadian Locomotive Co., 40 consolidation locomotives. They are for the use of the Ministry of Munitions, and will be used in the transport of men and munitions to the seat of war.

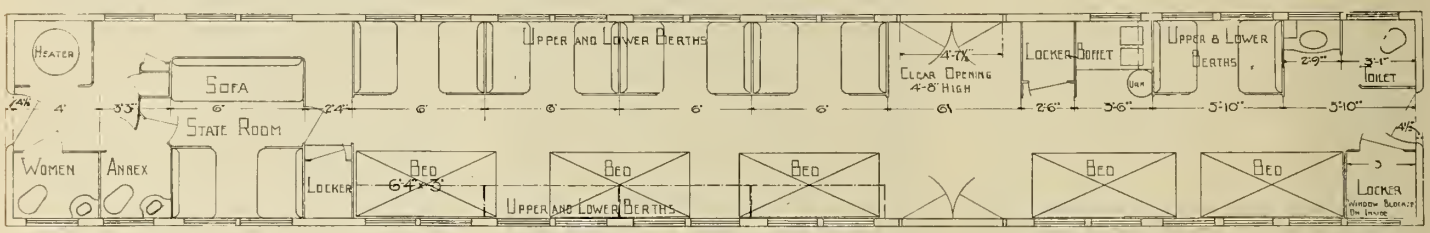
The fire at the Preston Car & Coach Co.'s works, Preston, Ont., recently, destroyed 3 sleeping cars under construction for Canadian Government Railways, and 1 gas electric car, as well as several electric railway cars which are mentioned in the Electric Railway Department on another page.

It is stated by a U.S. paper that the Russian Government is negotiating with Canadian car builders for a considerable number of "so called pood cars." To clear up this mystery in designation, we may say that a pood is the Russian standard of weight, equivalent to about 36 lbs. It is possible that in the transmission of the item, some figures stating the number of poods, thus indicating the capacity of the cars, have been omitted.

The Imperial Munitions Board, Ottawa, has ordered for the British Government, 17,000 chilled tread cast iron double plate car wheels. The order has been divided as follows: Canadian Car & Foundry Co., Ltd., 9,000; Canadian Iron Foundries, Ltd., 4,000; Dominion Wheel & Foundries, Ltd., 4,000.

We are advised that while the rotary snow plough and 10 Sante Fe (2-10-2) locomotives, mentioned in our last issue, were ordered from the Montreal Locomotive Works, they were, owing to the exigencies of the occasion, built by the American Locomotive Co., at its Patterson, N.J., and Dunkirk, N.Y. works.

Canadian Government Railways have converted 10 sleeping cars into hospital cars for the transportation of wounded and invalid soldiers from the seaboard to their destinations. Five of these cars have been provided with wide side doors, and the door at one end widened, and the other five have been arranged with widened end doors only. Those with the side doors are numbered even numbers from 3800 to 3808, and those with the end entrances only, the odd numbers from 3801 to 3809. The cars with the side doors are equipped with 8 standard hospital beds, and those with the end doors have 13 beds. The cars will be operated in pairs, or one side door car to at least two or three of the others. The drawing rooms and all but one lower berth have been removed, and the beds placed longitudinally on each side, with 18 ins. between each bed, and sufficient aisle space for the passage of military stretchers. The bed accommodation is, 1 lower and 13 upper berths and 13 beds, in five of the cars; and 1 lower, 11 upper berths and beds, not including the stateroom, in the other five cars. The illustration on this page shows the layout of one lot of the cars.



Hospital Car, Canadian Government Railways.

Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending Jan. 12, 1917	Wheat.	Oats.	Barley.	Flax.	Totals.
Fort William—	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
C.P.R.	3,218,612	1,509,478	167,954	.....	4,896,044
Consolidated Elevator Co.	997,983	397,213	30,249	151,998	1,577,443
Empire Elevator Co.	872,654	341,623	39,586	249,453	1,503,316
Ogilvie Flour Mills Co.	1,247,660	154,131	30,448	.....	1,432,239
Western Terminal Elevator Co.	746,561	308,897	32,289	341,135	1,428,882
G. T. Pacific	2,880,752	2,076,974	113,443	81,314	5,152,483
Grain Growers' Grain Co.	1,213,703	872,291	81,313	.....	2,167,307
Fort William Elevator Co.	793,211	577,694	28,426	63,306	1,462,637
Eastern Terminal Elevator Co.	1,072,539	685,433	19,063	.....	1,776,568
Thunder Bay Elevator	672,539	491,934	73,515	65,102	1,303,090
Port Arhtur—					
Port Arthur Elevator Co.	4,056,416	2,341,729	376,339	146,612	6,921,096
D. Horn & Co.	248,101	131,816	41,898	123,694	545,509
Dominion Government Elevator	1,912,502	761,508	88,402	147,248	2,909,660
Grain afloat	89,245	101,351	.....	.....	190,596
Total terminal elevators	20,022,011	10,752,072	1,122,925	1,369,862	33,266,870
Calgary Dom. Govt. Elev.	986,194	264,420	11,284	26,846	1,288,744
Saskatoon Dom. Govt. Elev.	629,001	126,178	1,917	14,348	771,444
Moose Jaw Dom. Govt. Elev.	334,321	247,684	22,374	1,645	606,024
Vanocuver	5,477	85,035	.....	.....	90,512
Total interior terminal elevators	1,954,993	723,317	35,575	42,839	7,756,724
Depot Harbor	.....	305,635	.....	.....	305,635
Midland—					
Aberdeen Elevator Co.	321,420	122,432	36,840	.....	480,692
Midland Elevator Co.	19,961	.....	.....	.....	19,961
Tiffin, G.T.P.	1,381,013	397,817	201,253	.....	1,980,083
Port McNicol	1,170,870	1,865,625	51,104	.....	3,087,599
Collingwood	.....	2,450	.....	.....	2,450
Goderich Elevator and Transit Co.	770,744	249,033	.....	.....	1,019,777
Grain afloat	.....	177,815	.....	.....	177,815
Kingston—					
Montreal Transportation Co.	.....	144,992	.....	.....	144,992
Commercial Elevator Co.	.....	115,151	.....	.....	115,151
Port Colborne	723,583	1,415,205	.....	.....	2,138,788
Montreal—					
Harbor Commissioners no. 1	307,966	1,201323	37,847	.....	1,547,136
Harbor Commissioners no. 2	132,700	1,088,482	97,583	.....	1,318,765
Montreal Warehousing Co.	288,934	2,166,033	1,247	.....	2,456,214
Quebec Harbor Commissioners	23,190	150,188	.....	*5,393	179,471
West St. John, N.B.	302,087	204,536	160,843	.....	667,466
Total public elevators	5,442,468	9,607,417	586,717	5,393	15,641,995
Total quantity in store	27,419,472	21,082,806	1,745,217	1,412,701	51,665,589

*Corn.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Algoma Central & Hudson Bay Ry.—R. S. McCORMICK, heretofore Chief Engineer, A.C. & H.B.R., and Algoma Eastern Ry., has been appointed General Superintendent and Chief Engineer, A.C. & H.B.R. Office, Sault Ste. Marie, Ont.

W. C. PAUL has been appointed Assistant Trainmaster. Office, Steelton, Ont.

Algoma Eastern Ry.—A. L. SMITH, heretofore Superintendent, London Division, Ontario District, C.P.R., London, Ont., is reported to have been appointed President and General Manager, A. E. R. Office, Sudbury, Ont.

J. A. DeFORGE has been appointed Purchasing Agent. Office, Sudbury, Ont.

Canadian Government Railways.—W. N. INGRAM, heretofore Master Mechanic, District 5, Intercolonial Division, Edmundston, N.B., has been appointed Master Mechanic, District 4, Intercolonial Division, vice H. D. McKenzie, transferred. Office, Stellarton, N.S.

H. D. McKENZIE, heretofore Master Mechanic, District 4, Intercolonial Division, Stelalrton, N.S., has been appointed Master Mechanic, District 5, Intercolonial Division, vice W. N. Ingram, transferred. Office. Edmundston, N.B.

T. W. McBEATH, heretofore locomotive man, Moncton, N.B., is reported to have been appointed Road Foreman of Locomotives, District 5, Intercolonial Division, with headquarters at Edmundston, N.B.

C. W. McMANUS, heretofore conductor, Sunny Brae, N.S., is reported to have been appointed Trainmaster, District 1, Transcontinental Division. Office, Napadogan, N.B.

L. S. LANDERS, heretofore Resident Engineer, District 3, Intercolonial Division, Truro, N.S., has been appointed Assistant Engineer, Levis, Que.

P. B. ROBB, heretofore chief clerk, Car Service Department, N.B., is reported to have been appointed chief clerk, same department, Winnipeg, vice A. P. Gorbell, promoted.

Canadian Northern Ry.—A. T. SMITH, heretofore chief clerk to General Freight and Passenger Agent, Halifax & Southwestern Ry., Halifax, N.S., has been appointed Travelling Freight and Passenger Agent, C.N.R., which includes the H. & S.W.R. Headquarters, Halifax, N.S.

WM. PHILLIPS, Freight Traffic Manager, Eastern Lines, having resigned to enter Cunard Steamship Co.'s service, as announced in our last issue, the duties pertaining to that position are, for the present, being performed by G. H. SHAW, General Traffic Manager, Toronto.

G. N. GOAD, heretofore Inspector of Transportation, Eastern Lines, Toronto, has been appointed Terminal Trainmaster, Toronto Terminals, including Todmorden, with jurisdiction over operations in yard, freight house and team tracks.

J. F. HARVEY has been appointed acting Manager, Prince Arthur Hotel, Port Arthur, Ont., vice A. S. McLean, promoted.

A. S. McLEAN, heretofore Manager, Prince Arthur Hotel, C.N.R., Port Arthur, Ont., has been appointed Assistant General Superintendent of Hotels, Sleeping, Dining and Parlor Car, Hotel and News Department. Office, Winnipeg.

J. T. WHITLAW has been appointed station agent, Calgary, Alta., vice O. A. Thomas.

A. R. McDOUGALL has been appointed Commercial Agent, C.N.R. and Duluth, Winnipeg & Pacific Ry., Minneapolis, Minn., vice C. A. Skog, promoted.

P. 4 81

A. B. Calder,
Assistant General Passenger Agent, Canadian Pacific Railway.

P. 4 82.

W. B. Johnson,
Master Mechanic, District 6, Intercolonial Division, Canadian Government Railways.

C. A. SKOG, heretofore Commercial Agent, Minneapolis, Minn., has been appointed District Freight and Passenger Agent, C.N.R. and Duluth, Winnipeg & Pacific Ry., Duluth, Minn., vice J. H. McKinnon, transferred to Operating Department.

Canadian Pacific Ry.—A. B. CALDER, formerly General Agent, Passenger Department, C.P.R., Chicago, Ill., and latterly conducting a general ticket agency in Winnipeg with his father, has been appointed Assistant General Passenger Agent, C.P.R., Montreal. He will especially attend to United States business and offices.

A. E. GRIGGS, Bridge and Building Master, Brownville Division, New Brunswick District, has had his office moved from McAdam Jct., N.B., to Brownville Jct., Me.

W. B. HARPER has been appointed Resident Engineer, Laurentian Subdivision, Quebec District, vice J. M. Silliman, whose appointment as Resident Engineer, London, Ont., was announced in our last issue. Office, Montreal.

J. K. SAVAGE, heretofore Superintendent, Regina Division, Saskatchewan District, Regina, has been appointed Superintendent, Smiths Falls Division, Quebec District, vice M. A. Fullington. Office, Smiths Falls, Ont.

C. GRIBBINS has been appointed Division Master Mechanic, Smiths Falls Division, Quebec District, vice F. Ronaldson, promoted. Office, Smiths Falls, Ont.

F. RONALDSON, heretofore District Master Mechanic, Farnham Division, Quebec District, Farnham, Que., has been appointed Master Mechanic, Ontario District, vice A. H. Kendall, enlisted for overseas service as captain in the battalion of skilled railway employes now recruiting. Office, Toronto.

W. TANSLEY, Assistant Superintendent, is appointed acting Superintendent, London Division, Ontario District, vice A. L. Smith resigned. Office, London, Ont.

T. FAWCETT, heretofore Assistant General Storekeeper, Western Lines, Winnipeg, has been appointed General Storekeeper, Western Lines, vice L. O. Genest, deceased. Office, Winnipeg.

A. E. HARSHAW, heretofore Chief patcher, North Bend, B.C., has been appointed Chief Dispatcher, Lethbridge, Alta., vice C. W. Fisher.

W. L. CODINGTON, heretofore Resident Engineer, Medicine Hat, Alta., has been appointed Resident Engineer, Revelstoke, B.C.

F. W. ADAMS, heretofore boiler maker, Lethbridge, Alta., is reported to have been appointed Foreman Boiler Maker, Revelstoke, B.C., vice S. Blower, transferred.

K. A. R. DOUGLAS, heretofore Chief Dispatcher, Souris, Man., has been appointed Chief Dispatcher, North Bend, B.C., vice A. E. Harshaw, transferred.

Duluth, Winnipeg & Pacific Ry.—J. H. McKINNON, heretofore District Freight and Passenger Agent, C.N.R. and Duluth, Winnipeg & Pacific Ry., Duluth, Minn., has been appointed Superintendent, D.W. & P.R. Office, Virginia, Minn.

Grand Trunk Ry.—L. J. ROULEAU, heretofore chief clerk, Division Freight Agent's office, Montreal, has been appointed Commercial Agent, Quebec, Que.

H. R. McLENNAN, heretofore Chief Dispatcher, London, Ont., has been appointed Trainmaster, Districts 20 and 21, London Division, Ontario Lines, vice R. H. Fish, promoted. Office, Brantford, Ont.

C. KELSO has been appointed acting Master Mechanic, Stratford, Ont., during the absence of R. PATTERSON, who has

been loaned to the Imperial Munitions Board, for the remainder of the war, and placed in charge of the General Car and Machinery Co.'s plant at Montmagny, Que.

W. M. DOHERTY, heretofore Night Chief Dispatcher, London, Ont., has been appointed Chief Dispatcher, Brantford, Ont., vice A. F. Sharpe, transferred.

A. F. SHARPE, heretofore Chief Dispatcher, Brantford, Ont., has been appointed Chief Dispatcher, London, Ont., vice H. R. McLennan, promoted.

J. R. BRENT has been appointed Night Chief Dispatcher, London, Ont., vice W. M. Doberty, promoted.

J. CALDWELL, heretofore Superintendent, Detroit Division, Western Lines, Detroit, Mich., has been appointed Agent at Chicago, Ill.

W. R. EASTMAN, chief clerk to General Passenger Agent, Central Vermont Ry., St. Albans, Vt., has been appointed New England Passenger Agent, G.T.R., Boston, Mass., vice E. H. Boynton, retired.

The following station agents have been appointed: Strathmore, Que., D. Rousse; Sutton, Ont., R. G. Winters; Craigvale Ont., C. J. Alliston; Wilno, Ont., G. C. McFarlane.

Grand Trunk Pacific Ry.—W. J. STURGESS, heretofore Storekeeper, Transcona, Man., has been appointed acting Assistant Purchasing Agent, vice A. H. Mulcahey, loaned to the Imperial Munitions Board. Office, Winnipeg.

W. G. WHITELEY has been appointed acting Storekeeper, Transcona, Man., vice W. J. Sturgess, promoted.

L. V. DRUCE, heretofore Commercial Agent, Vancouver, B.C., has been appointed Division Freight Agent, Edmonton, Alta., vice A. E. McMaster, resigned.

A. DAVIDSON, heretofore Commercial Agent, Prince Rupert, B.C., has been appointed Commercial Agent with jurisdiction in B.C. territory, Rivers Inlet and south, including Vancouver, Victoria and Vancouver Island, reporting to Assistant General Freight and Passenger Agent at Prince Rupert, vice L. V. Druce, promoted. Office, Vancouver, B.C.

J. D. McAULEY, heretofore Travelling Freight and Passenger Agent, Juneau, Alaska, has been appointed Commercial Agent with jurisdiction in territory north of Rivers Inlet, including Queen Charlotte Islands, reporting to Assistant General Freight and Passenger Agent, Prince Rupert, vice A. Davidson, transferred. Office, Prince Rupert, B. C.

The following station agents have been appointed: Pembina Highway, Man., R. R. Tully; Watrous, Sask., H. McCreadie; Ruthilda, Sas., J. H. Gamble; Edgerton, Alta., M. O. Knudson.

Pennsylvania Rd.—C. B. BRODIE, heretofore Canadian Passenger Agent, Toronto, has been appointed District Passenger Solicitor, Newark, N.J., vice C. E. McCullough.

J. E. LITTLE, heretofore Passenger Solicitor, New York, has been appointed Canadian Passenger Agent, vice C. B. Brodie, promoted. Office, 56 King St. West, Toronto.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association's subscriptions to the Canadian Red Cross and Canadian Patriotic Funds, to Oct. 31, 1916, including $9,651.95 paid direct to enlisted employes, were $41,961.83. These amounts are exclusive of personal subscriptions by the commission and employes, and also of the monthly subscriptio nto the 50,000 club by the Toronto staff.

Canadian Northern Railway Construction, Betterments, Etc.

Canadian Northern Quebec Ry.—The Dominion Parliament is being asked to extend the time for the completion of the projected branch lines from Rawdon to the National Transcontinental Ry., with a branch line from Rawdon to Joliette; and a line from St. Jerome to St. Eustache, Que.

Mount Royal Tunnel and Terminal Co.—The Dominion Parliament is being asked to extend the time within which the company may complete its railways and station building in Montreal.

A contract has been let to Norcross Bros., of Montreal, for the erection of the temporary station building on Lagauchetiere and St. Monique Streets. The excavation of the larger area on which the permanent station will be erected will be done by Angus Sinclair, of Toronto. This latter contract involves the removal of some 280,000 cubic yards of material.

Canadian Northern Ry.—The ratepayers of Fort William, Ont., decided Jan. 1, by a vote of 409 to 362 in favor of the Vickers St. site for the proposed station for the C. N. R.

A press report states that the company has let contracts to lumbermen along its line between Port Arthur, Ont., and Warroad, Minn., for the supply of 1,300,000 ties and 200,000 posts and poles.

No new track was laid on C. N. R. lines in Manitoba, Saskatchewan or Alberta during 1916.

The company, it is reported, proposes to locate a stockyard near the government elevator at Saskatoon, Sask., at a cost of $30,000.

Canadian Northern Pacific Ry.—In connection with the building of the branch line from Kamloops the company acquired 90 acres of land in the Kelowna district. Through this area the right of way has been located, and the company claims that the whole 90 acres is thereby exempted from taxation. The town claims that at the most only six acres of this land is exempt, and desires to collect taxes on the balance. Judgment has been reserved in the Court of Appeals, which is being asked to reverse the decision of the lower court that the whole area is exempt.

The C. N. P. Ry. at present obtains an entrance into Vancouver over Great Northern Ry. tracks and to make use of these passes over the New Westminster bridge, owned by the province. The company was reported Jan. 5 to have paid up arrears of rental for the use of this bridge, and to be ready to sign an agreement with the government as to the future rental to be paid.

The installing of machinery in the car shops at Port Mann is reported to be well forward and it is expected that the shops will be ready for the construction of cars March 31.

An agreement is reported to have been reached between the company and the New Westminster City Council under which, in return for certain concessions, the company will remove certain tracks of the C.P.R. and of the British Columbia Electric Ry. to C. N. P. R. property. The total cost of the work is estimated at $100,000. The principal concession granted the company is the right to use Front St. for railway purposes, and the removal of the tracks is necessary in order that the city may extend Columbia St. through to 12th St. without having to carry it across the tracks.

The time within which Champion and White, who claimed certain riparian rights on part of the False Creek area, Vancouver, could appeal against the decision debarring them from further objection to the reclamation works having expired without notification of further proceedings being taken, it is expected that much more rapid progress will be made with the work than heretofore. The particular work with which these proceedings interfered was the building of the sea wall. A large quantity of concrete piling for this is already on the spot.

It was reported Jan. 5 that construction on the Vancouver station building would be started by Jan. 31.

Lines on Vancouver Island.—Good progress is reported to have been made with the construction of the car ferry slip at Patricia Bay, Vancouver Island. As soon as this is completed, which will probably be by April 1, a regular car ferry service will be maintained with the mainland.

The line from Patricia Bay into Victoria is being ballasted and got ready for traffic. The only piece of construction on the line unfinished is the bascule bridge at Selkirk Water, which is being built by the Canadian Bridge Co., Walkerville, Ont.

The grading of the Barkley Sound line is practically completed to mile 106, and the steel for this line is now being delivered at Port Mann. It will not be taken over until the ferry service is put in operation to Patricia Bay. The steel for the bridges necessary on the line will also be taken by the same route. It is reported that this 106 miles will be completed this year. (Jan., pg. 22.)

International Railway of New Brunswick.

The following press dispatch was sent from St. John, N.B., Jan. 12: "The Dominion Government organ here says the Government has acquired the International Ry., which runs from Campbellton to St. Leonards, N.B., and the Maine border. It hints at the purchase price being between $2,000,000 and $3,000,000.

We are officially advised that negotiations for the purchase of this railway were on when war broke out. It was then decided to enter into an agreement to purchase the line at any time within a five year period. In the meantime, the Dominion Government is paying rental on the road based on the price agreed upon, and it has been operated as a branch of the Intercolonial Division, Canadian Government Railways, since July 31,1914. The promoter and builder of the line, Thos. Malcolm, of Campbellton, N.B., died recently.

Utilizing Abandoned I.R.C. Right of Way.—At a meeting of the Dorchester, N.B., County Council, Jan. 18, a letter from the Assistant to the General Manager, Canadian Government Railways, was read stating that the C.G.R. would lease to the Parish of Moncton, "the portion of the abandoned right of way of the Intercolonial Ry. from Moncton to Berrys Mills, which will be properly described in the lease, for two years, and thereafter during the pleasure of the management, at a nominal rental of $1 a year, the parish to maintain the roadway."

Traffic Orders by Board of Railway Commissioners.

Storage and Demurrage at Sarnia, Capreol, and North Bay.

General Order 175. Dec. 26, 1916. The track storage and demurrage and general order 174, Dec. 23, 1916, prescribing tolls at all points in Canada from Jan. to April 30, 1917, both inclusive. It is ordered that the following charges for demurrage and track storage apply upon grain and lumber held in transit at Cartier, Sarnia, Capreol, and North Bay, from Jan. 1 to April 30, 1917, both inclusive: 24 hours, free; 48 hours, $1; 72 hours, $2; 96 hours, $5; 120 hours, $10; 144 hours, $15; 168 hours, $20; subject to an increase of $5 for each addition 24 hours or part thereof. It is further ordered that order 24436, Nov. 11, 1915, as amended by order 25285, Aug. 18, 1916, be suspended from Jan. 1 to April 30, 1917, both inclusive.

Moncton & Buctouche Ry. Tariff.

25737. Dec. 20, 1916. Re application of Moncton & Buctouche Ry. under sec. 327 of the Railway Act, for approval of its Standard Freight Mileage Tariff, C. R.C. 23. It is ordered that the said tariff be approved subject to the condition that the 5th class rate for the 11-15 mile group be reduced from 7 to 6c per 100 lbs.

Classification of Health Salts.

25755. Dec. 26, 1916. Re application of Harry Horne Co., Toronto, for the same specific classification for health salts as provided in the Canadian Freight Classification for Epsom salts. Upon hearing the application at Toronto, Oct. 5, 1916, in the presence of the Chairman of the Canadian Freight Association for the railway companies, the applicant company being represented, and upon the report of the Board's Chief Traffic Officer, it is ordered that the application be refused.

Mileage Rates on Forest Products.

25761. Re complaint of Mountain Lumber Manufacturers' Association, of Nelson, B.C., against proposed cancellation by C.P.R. of mileage rates on forest products for distances over 500 miles, effective Jan. 1, 1917. Upon its appearing that the said rates for distances over 500 miles, as now in effect in C. P. Tariff, C.R.C. no. W-2055, are being used by the complainant and others; and that their cancellation will injuriously affect the complainant's business, it is ordered that the C.P.R. publish and file a supplement to its Tariff C.R.C. no. W-2214, containing the rates on forest products for distances over 500 miles, as published in rate column no. 7 of its Tariff C.R.C. no. W-2055; such supplement to become effective Jan. 1, 1917.

Freight Interchange at Brantford.

25764. Re order 25570, Oct. 27, 1916, authorizing construction of an interchange track between the Lake Erie & Northern Ry. and the Toronto, Hamilton & Buffalo and Grand Trunk Railways, at Brantford, Ont., and the application of the Dominion Steel Products Co., for an order directing the Toronto, Hamilton & Buffalo and Lake Erie & Northern Railways to interchange cars on the temporary track connecting the said railways where they cross each other in Brantford. Upon reading what has been filed in support of the application and on behalf of the railway companies interested; and the report and recommendation of the Board's Assistant Chief Engineer, it is ordered that the Toronto, Hamilton & Buffalo and the Lake Erie & Northern Railways be required, pending the construction and completion of the permanent interchange track authorized under order 25570, to interchange cars on the temporary track connecting their railways, where they cross each other in Brantford.

Rates on Zinc Clad Nails.

25798. Jan. 11.—The application of Shingle Agency of British Columbia for authority to include with shipments of shingles from B.C. the requisite quantity of zinc clad nails, the nails to be charged the same rates as the shingles. Upon hearing the application at Vancouver, June 26, 1916, the applicant and the Canadian Pacific and Canadian Northern Railways being represented, and upon the Chief Traffic Officer's report and recommendation, and reading the further written submissions filed, it is ordered that the application be refused.

Freight Rates From United States.

General order 177. Jan. 10.—Re question of way tariffs of freight rates from points in the United States to points in Canada should not bear a notation to the effect that unless specifically indicated as being competitive, they will automatically apply to intermediate points in Canada not mentioned in the tariff, notwithstanding Interstate Commerce Commission rule 77 (a) of circular 18-A. Upon hearing the matter at Ottawa, Dec. 19, 1916, the Canadian Pacific, Grand Trunk, and Ottawa & New York Railways, the Michigan Central Railroad, the Toronto Board of Trade, and the Canadian Manufacturers' Association being represented, the representatives of the railway companies consenting, it is ordered that tariffs of freight rates from points in the U.S. to points in Canada include, or be supplemented by, a rule to the effect that the said rates, unless specifically indicated as being competitive, will apply to intermediate points in Canada not enumerated in the said tariffs, and that railway companies arrange accordingly.

Passenger Rates, Chicago to San Francisco.—The Interstate Commerce Commission decided at Washington recently, in the case of the Public Service Commission of the State of Washington vs. Alabama & Vicksburg Ry. et al, that all-year excursion passenger fares and summer tourist excursion passenger fares from Chicago to San Francisco, applicable in either direction by way of Seattle, Wash., or Portland, Ore., were unduly prejudicial, to the extent that they exceeded the corresponding fares contemporaneously in effect from Chicago to San Francisco, applicable in either direction via New Orleans, La., or El Paso, Texas. The decision really means a reduction of rates from Chicago, St. Louis, etc., to San Francisco, of approximately from $17.50 to $20. An order in accordance with the decision was issued to become effective Feb. 15, but, a rehearing having been asked, the effective date has been postponed to Apr. 2.

Canadian Society of Civil Engineers, Toronto Branch.—At the annual meeting on Jan. 11, the following officers were elected for the current year: Chairman, E. W. Oliver; Secretary Treasurer, L. M. Arkley; Executive Committee—H. G. Acres, A. H. Harkness, T. T. Black and E. G. Hewson. The retiring Chairman, G. A. McCarthy, also acts as a member of the Executive Committee.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	$3,834,200	$2,636,800	$1,197,400	$ 711,000
Aug.	3,684,900	2,612,900	1,072,000	614,300
Sept.	3,187,900	2,455,300	732,600	x177,300
Oct.	3,716,890	2,496,590	1,220,300	x36,700
Nov.	3,722,300	2,472,300	1,250,000	38,600
	$18,146,100	$12,673,800	$4,322,400	$1,149,900
Incr	$4,230,100	$3,080,200	$1,149,900	

x Decrease

Approximate earnings for Dec., $3485,400, and for three weeks ended Jan. 21, $1,903,000, against $3,235,600, and $1,514,400, for same periods, 1915 and 1916.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	$12,247,440.39	$8,230,348.66	$4,017,091.73	$1,216,688.61
Aug.	13,570,467.31	7,802,680.46	5,467,786.85	2,025,472.13
Sept.	12,134,159.96	7,004,400.80	5,129,759.16	384,458.52
Oct.	13,237,086.36	7,562,346.99	5,674,739.37	x904,694.78
Nov.	13,401,943.90	7,837,983.76	5,563,960.14	x790,452.89
	$64,291,097.92	$38,437,760.67	$25,853,337.25	$1,931,471.59
Inc.	$10,526,607.53	$8,595,135.94	$1,931,471.59	

x Decrease

Approximate earnings for three weeks ended Jan. 21, $6,870,000, against $5,647,000 for same period, 1916.

Grand Trunk Railway Earnings.

Following are the earnings and expenses for the G.T.R., including the Canada Atlantic Ry., the G.T.W.R. and D.G.H. & M.R., for November:

Grand Trunk Railway.	
Earnings	$4,317,200
Expenses	3,272,000
Net earnings	$1,045,200
Grand Trunk Western Railway.	
Earnings	$ 759,600
Expenses	692,900
Net earnings	$ 66,700
Detroit, Grand Haven & Milwaukee Railway.	
Earnings	$ 266,800
Expenses	261,300
Net earnings	5,500

Approximate earnings for Dec., $5,280,245, and for three weeks ended Jan. 21, $3,112,728, against $4,819,124, and $2,797,917, for same periods, 1915 and 1916.

Traffic Receips of the System.

Aggregate from Jan. 1 to Dec. 31:

	1916.	1915.	Increase.
G.T.R.	$47,286,799	$39,820,694	$8,006,105
G.T.W.R.	9,191,107	7,876,264	1,314,843
D.G.H. & M.R.	3,823,992	2,884,912	399,080
Totals	$60,301,898	$50,581,870	$9,720,028

Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section, 916 miles, for Nov. were $652,145, against $848,169 for Nov., 1915; $608,136 for Dec., against $744,584 for Dec., 1915. The aggregate earnings from July 1 to Dec. 31 were $2,903,289, against $3,451,310 for same period, 1915.

Demurrage Decision.—The Interstate Commerce Commission has refused to sanction a proposed rule of the New York, New Haven & Hartford Rd. and affiliated lines providing that, when cars are held in transit short of billed destination, or on storage tracks at destination, because of the failure of consignees to unload within the free time cars placed for delivery, the published demurrage charges will apply on the cars so held and no additional free time will be allowed after final placement.

Canadian Northern Railway's Report for Year Ended June 30, 1916.

The following report has been issued over the signature of Sir Wm. Mackenzie, President: The results of operations for the fiscal year were as follows:

Gross Earnings:	
Passenger traffic	$ 6,128,470.76
Freight traffic	26,560,213.12
Express, mail, telegraph, interest and profits from elevators and other subsidiary companies, investments, etc.	2,787,591.18
	$35,476,275.06
Working expenses (including taxes, etc.)	26,102,744.52
Net earnings	$9,373,530.54
Deduct fixed charges	9,621,657.70
Net loss or deficit	$248,127.16

The system had under operation an average of 8,048 miles in 1916, compared with an average of 7,269 miles in 1914-15, an increase of 779 miles, or 10.72%.

The Total Operating Revenues were $35,476,275.06, an increase of $9,564,-168.76, or 36.91% over 1914-15. The increases in revenue were derived as follows: Passenger traffic, $717,246.39, or 13.25%; freight traffic, $8,352,412.60, or 45.87%; mails, $12,877.97, or 6.05%; express, $195,064.70, or 30.27%, and miscellaneous traffic, $286,567.10, or 19.96%. While a portion of these increased earnings is due to an increased mileage, a substantial improvement has been made in the system's business. This is indicated by the fact that earnings per mile of road for the year were $4,408.08, compared with $3,564.74 for the previous year, an increase of 23.66%.

The system's new mileage on the Pacific Coast and the Northern Ontario Divisions have not yet come into full earning power, as operation on them was only commenced in the late autumn of 1915. It will be realized that time is required for the creation of industries to develop the natural resources of these newly opened-up sections of the country. The system is fortunate in the possession of vast timber, mineral, and agricultural traffic resources on these new lines; and the business from them must be eventually profitable. When the lines were surveyed, the traffic from the development of these resources was foreseen, and it is pleasant to be able to report that actual operations are proving these expectations well founded. The British Columbia section, from the commencement, produced each month substantial increases in revenue, and, before the close of the fiscal year, yielded most encouraging revenues. Much of the business offering is from the Pacific Coast to points inland, but a commencement has been made in the marketing of the excellent timber tributary to the line, and in the cultivation of the rich lands in the valleys through which the railway traverses the mountain country. There is a considerable acreage of land suitable for intensive farming along the company's railway, and its products will find a ready market on the Pacific Coast. The excellent showing made by the mileage in British Columbia, after only seven months of operation, may be well considered an outstanding feature in the year's operations. The colonization of Northern Ontario has been retarded by the war; but, peculiarly enough, there is a compensating feature in the inordinate demand for paper and its consequent startling increase in costs. The spruce balsam, and jack-pine woods, suitable for making pulp, and of which there is an abundance tributary to the company's lines, are finding an immediate market demand. The Ontario Government has offered for sale a large acreage of wood; and the company, having 2,000,000 acres of land, mostly covered with pulpwood, is undertaking their development. Arrangements are being made for the establishment of pulp and paper mills in the districts and, in the meantime, large shipments of pulpwood will be made to mills already under operation in the older sections of the country. Mills for the sawing of merchantable timber are also being erected along the company's lines.

A large part of the increase in freight revenue originated from grain traffic. The system carried 131,978,809 bush. of grain in 1916, compared with 58,575,520 bush. in 1915, an increase of 125.31%. Inasmuch as many of the security holders invested their funds in the company's undertakings, believing that the heart of the Empire would some day need to draw heavily upon the wheatfields of the Canadian West, it is with pride that the directors present these figures, illustrating the extent to which the prairies have been opened up, made productive, and the produce marketable by the company's railways. There were probably few who thought that the crucial necessity would come so soon; but, having come, it must be considered fortunate that the Canadian Northern System and the country tributary to it were sufficiently developed to take an important part in supplying the Empire's food requirements. To the preponderance of grain traffic—this commodity being carried at a low rate—is due the decrease in the revenue per ton per mile from 00.831c. to 00.679c, or 18.29%. It is interesting to note, however, that the average distance a ton of freight was hauled, increased from 204.08 miles to 288.46 miles, or 41.35%, with, of course, a marked advantage in operating results.

The passenger train earnings per train mile increased from 87.409c. to 93.379c., or 6.83%. The system's passenger and freight earnings, during the year, were affected by the lack of two important terminals which are under construction, but were not completed in time to take care of transcontinental business. It is expected that the tunnel under Mount Royal and a station for the system's business in the heart of Montreal, will be ready for operation in the spring of 1917. The Vancouver terminal is under construction and, it is expected, will be available for the system's business in the summer of 1917. The station at Toronto, which the system will occupy with the C.P.R., has been completed.

The system has also been handicapped by not having a line from Toronto to the Niagara peninsula, connecting with the railway systems of the United States converging at the Niagara frontier. When this line is constructed, it will give the system the further advantage of rail connection with its electric subsidiary line, the Niagara, St. Catharines and Toronto Ry., now serving the important manufacturing district of the Peninsula. Delays in the completion of these undertakings, without which neither a satisfactory transcontinental business nor an entirely successful eastern passenger and fast freight business can be possible, have occurred, as a result of disturbed conditions of finance resulting from the war; and the directors would emphasize the fact that revenues for the year have been obtained notwithstanding the lack of these much-needed facilities.

The Operating Expenses were $26,102,-744.52, compared with $19,288,814.42 for 1915, an increase of 35.33%. A portion of this increase is due to the operation of a greater mileage and to the expenses incidental to taking over new lines which were operated for only a portion of the year. But, with the heavier traffic, the system was naturally compelled to expend a relatively larger amount in operation, spending for this purpose $3,243.38 a mile compared with $2,653.57 the previous year. The system is paying a wage schedule well up to the level of the highest standard. The labor situation in the newer sections of the country has been particularly difficult to meet, but with increasing settlement may be expected to improve. The weather conditions in the winter period covered by the report were unprecedentally bad in Northern Ontario ano Western Canada, where the system has a large mileage under operation. British Columbia was subjected to a lower temperature and a greater fall of snow than in any time in the previous 20 years. These conditions added substantially to the expense in the cost of operation. The working expenses for the year were 74.73% of the operating revenue, a reduction of 1.93 from the previous year. Including revenue from all sources the ratio of working expenses, including taxes, was 73.58%, compared with 74.44% for the previous year.

Land Department: During the year, according to government returns, only 51,243 immigrants came into Canada. Immigration on a large scale is not to be expected until after the declaration of peace; and, in the meantime, sales of western lands are naturally limited. During the year there were sold of the system's lands, 19,443 acres, at an average of $16.37 an acre, or an aggregate of $318,-248.32. The previous year's sale price averaged $15.53 an acre. There were cancelled, by mutual arrangement, agreements for the sale of 4,850 acres; so that the net acreage of land available for sale has been decreased by 14,593 acres, leaving 843,127 acres in the prairie provinces available for sale. Land grant bonds of the issue of 1909 amounting to $272,533 were retired, leaving outstanding in respect of this issue $2,217,740.

Car Trust Obligations: No car trust obligations were created, and $3,628,000 were paid in respect of obligations made in previous years.

Ocean Steamship Services: An agreement of great importance in the development of the system's freight and passenger traffic, was made during the year with the Cunard Steamship Co. Under its terms the Cunard Co. has taken over the Atlantic steamships controlled by the C.N.R., and a close working alliance is in effect between the two companies, the various Canadian services of the Cunard line and the Canadian Northern having become, in effect, a single transportation unit between Europe and Canada. Steamshi pservices on the Pacific Ocean are also in contemplation. The arrangement was not completed in time to be of benefit to last year's earnings, but will from now on become of benefit and, after the conclusion of the war, must result in giving to both parties a very substantial and remunerative business.

General Remarks: Since the new lines through Northern Ontario and British Columbia, making the system transcontinental, have been brought under operation during the year under review, your directors deem it advisable to state the salient

facts in connection with these lines and to refer to the position the system will henceforth occupy in relation to the traffic of the country. The construction of the new lines involved a greater expenditure than was first contemplated. During the years of construction your directors became impressed with the increasing weight of train loads, which necessitated the older established railways in Canada and the U.S. spending huge sums of money in line revision, and decided that it would be true economy to build these important sections of the system's main line to a standard that would forever obviate the necessity of revisions for grade improvement. As a result, your railway now crosses the summit of the Rocky Mountains by means of 7/10 of 1% grades confined within one division; and these are the heaviest gradients opposing eastbound traffic—the direction of the heaviest haul—between the waters of the Pacific at Vancouver and the waters of the Atlantic at Montreal. Nowhere else on the Pacific Coast Divisions and nowhere on the new lines in Northern Ontario, are grades in excess of 5/10 of 1%. The possession of these favorable grades has given the system an all important advantage in the economy of operation, particularly in carrying the two commodities offering in largest volume, viz., lumber from the Pacific slope of the Rocky Mountains to the prairies and eastern points, and grain from the prairie provinces to Eastern Canada and Atlantic ports. The main line from Quebec to Vancouver is superior to any line crossing the American continent in points of grades and curvatures favoring traffic. Although the transcontinental line has been in operation for only a few months, its superior economies have established the fact that the road must assume a commanding position when traffic has grown to dimensions making general the use of heavy trainloads.

In this connection it becomes necessary to examine the locations of the lines from the point of traffic opportunities, this being of not less importance than the physical condition.. The system's railways occupy an enviable position in the prairie provinces, in which the first mileage was constructed. Assuming the population of villages and towns having 1,000 inhabitants and over to be urban, the system's railways serve 90% of the urban population of Alberta, and 97% of the urban population of Saskatchewan and Manitoba. In British Columbia the system has lines serving 78% of the urban population. In Ontario and Quebec, the provinces from which manufactured products are mainly derived for Canadian consumption, the system will have access to cities and towns with 70% of the factory output of these two provinces, when the 40 miles of railway to Hamilton, for which right of way and terminal properties have been secured, is in operation. Further than this, the system's railways are now serving 75% of the aggregate population of the cities and towns of all Canada having 5,000 inhabitants and over. It is only to be expected that the system will not come into full earning power immediately. The initial years of transcontinental operation are involving terminal improvements, increases in equipment, changes in organization, and the building up of traffic connections. For some time past your directors have had plans prepared for these matters, which it was hoped to put into effect so soon as the lines between Quebec and Vancouver were completed; but, as a result of the disturbed conditions of finance, this was found to be impossible. It is hoped, however, that during 1917 substantial progress will be made and, as the plans are carried into effect, the beneficial results will become apparent in the earnings of the system.

The prospects for grain tonnage for the coming year are not as good as they were last year, as will be seen by the following statement of the grain yields for the three prairie provinces, compiled by our Grain Information Bureau; and, although complete returns are not yet available—threshing still being under way—they may be regarded as approximately correct. The yields are as follows: Wheat, 170,500,000 bush.; oats, 280,000,000 bush.; barley, 44,500,000 bush.; flax, 6,700,000 bush.; total, 501,700,000 bush. According to these figures, the 1916 crop will be less than the 1915 crop, by about 250,000,000 bushels; but it is necessary to remember in this connection, that there remained over from the 1915 crop, in the territory tributary to the system's lines, 38,000,000 bush. of grain, which in all probability will be marketed this year. The prices realized by farmers for the 1916 crop, and the unmarketed part of the 1915 crop, are much better than they were a year ago; and the statement which is made to the system's management by an official of the Alberta Department of Agriculture that "the net result this year will increase the farmers' income by several million dollars," in indicative of the generally strong financial position of grain growers along C.N.R. lines in middle Canada. While the proceeds derived by farmers from the 1915 crop were largely required to liquidate past obligations, the returns from the 1916 crop are largely available for the purchases of live stock, machinery, building material, and general merchandise. Fortunately, the system, having its lines directly connected up with the grain country of Western Canada, the industrial centres of Eastern Canada, and the seaports of the Atlantic and Pacific, is in the position to make up the shortage in grain tonnage by a tonnage in general commodities which will be carried at more remunerative rates. The present situation emphasizes the fact that the railway is not as dependent upon grain crop movements as in the past; and, in becoming transcontinental, has acquired a highly diversified traffic.

The following statement of the comparative gross traffic earnings for the four months succeeding the fiscal year under review, is submitted as evidence of this contention:

	1916.	1915.	Increase.
July	$3,834,200	$1,961,700	$1,872,500
August	3,684,900	1,983,600	1,701,300
September . .	3,187,900	2,757,000	430,900
October	3,716,800	3,678,500	38,300
Totals . . .	$14,423,800	$10,380,800	$4,043,000

In Oct., 1915, there was a heavy grain movement, and it is pleasing to note that the traffic in other commodities has more than offset the lighter grain movement this year. General trade prospects for the next fiscal year are good. For the 12 months ended Sept. 30, 1916, the total export and import trade of Canada was $803,000,000 in excess of the corresponding period the previous year; and, fortunately for the country, the balance of trade is on the right side, exports having exceeded imports by $367,000,000. The exports for this period were $534,000,000 in excess of the exports for the same period the previous year. Statistics gauging the extent of domestic trade are not available, but if railway tonnage be a measuring gauge—and it is usually accepted as such—the general domestic trade of the country is substantially better than it was a year ago.

There is, naturally, keen speculation as to the future of Canada after the war, and this is increased by the patent fact that a large measure of the country's present prosperity is due to productions for war purposes. While your directors hesitate to express their views on this matter, they feel assured that the industrial disarrangement through peace will be less serious and of shorter duration than the disarrangement which occurred in 1914 as a result of the war. It must not be forgotten that Canada is essentially a country of the future. Her stock of natural resources remains largely intact. Her vast known mineral wealth is only in the initial stages of development. Her timber resources can be valued in the hundreds of millions of dollars, and will become even more valuable during the world's reconstruction days. Her agricultural resources, which have been the country's mainstay, are still capable of vast development, only one quarter of the surveyed, arable land being under occupation, and less than one eighth of it under annual cultivation. The knowledge of these things must serve to create a spirit of optimism in Canada's future; and a realization that a large portion of these timber, mineral, and agrarian undeveloped resources, now made accessible through the system's new lines, has convinced your directors that the system is capable of an immeasurable expansion in earning power. These things are set forth because your directors believe there is need for a better understanding of the extent to which the system is prepared to enter into the transportation services of Canada, and in partial explanation of the belief they firmly hold that the ultimate prosperity of the C.N.R. system is measurable only by the prosperity of Canada.

New Directors: During the year three new members were added to the directorate: W. K. George, of Toronto, Vice President, Sterling Bank of Canada; W. J. Christie, a prominent business man of Winnipeg, and H. W. Richardson, head of James Richardson & Sons, grain merchants, Kingston, Ont.

Steel Rails Duty.—In reference to statements which have been made in various papers as to the suspension of duty on steel rails imported into Canada, we are officially informed that no general order in council has been passed suspending the duty. Several of the railways wanted to make contracts for their requirements for the upkeep of their tracks and Canadian steel mills were unable to take these contracts, owing to having large orders for munitions. The railway companies were therefore compelled to look to the United States for their supply at a largely advanced price. Some of the companies applied for a refund of duty, and in each case a refund of duty will be granted on rails so imported during a certain period, with the exception of the war tax of 7½%, which will have to be paid by the railways. It was found absolutely necessary for the government to take action along these lines in order to enable the railways to keep up their maintenance and facilitate traffic during the war.

G.T.R. Taxes in Michigan.—The Michigan State Legislature is considering an amendment to the constitution to permit the state to own and control railways, with a view, it is said, of dealing with a claim against the G.T.R. for taxes dating back to 1834, when the Detroit & Pontiac Ry., now a part of the G.T.R. system, was built.

Electric Railway Department

The Montreal Tramways Co's Car Service.

There has been some complaint of late with respect to the Montreal Tramway Co.'s service. A statement in regard to the matter was made recently by J. E. Hutcheson, General Manager, in the course of which he said that the cause was due to the insufficiency of power. The company, a year ago, took steps to provide for an additional 17,000 h.p., which was expected to have been ready to be turned on during Nov., 1916. The contractors for boilers, engines and generators were unable to make deliveries and it is not expected that the additional plant will be ready for operation before March.

F. W. Hibbard, Chairman of the Quebec Public Utilities Commission, made the following statement Jan. 16: "The defects in the Montreal Tramways Co.'s service have been under investigation by the commission. The partial failure in service is due simply to lack of power. The source of the company's supply is almost entirely hydraulic, and the winter conditions have seriously affected this. The company is making every possible effort to overcome the shortage and instal an auxiliary steam plant. As to the responsibility for such a plant not having been installed before, there is not sufficient data to express a definite opinion. The chairman of the commission has taken charge of the matter himself, and has called for traffic reports and other details with a view to determining this question. It is fair to say, however, that if the company's contractors had kept their engagements it would have ample power today. A full report will be submitted later."

Another Electric Railway Proposed for London.

In connection with the cutting down of service on the G.T.R. London, Huron & Bruce line from two trains to one each way every day, under the plan approved by the Board of Railway Commissioners for the relief of freight congestion, a proposal has been made in London, Ont., for the electrification of the line under municipal auspices. The line was originally projected as a municipal enterprise, about the same time as the London & Port Stanley Ry., but was handed over to the G.T.R., the city financing it to the extent of $75,000. P. Pocock, Vice Chairman of the London Railway Commission, is reported to have said in an interview Jan. 15: "If we could have the Board of Railway Commissioners or some other competent body fix the value of the line and the G.T.R. interest in it as a basis upon which the people could take it over, the scheme could be carried out to advantage. Having acquired it at a fair price, we might then approach all of the municipalities concerned to have them join with us in electrifying the line and placing it on a thoroughly modern basis, on the high standards set by the London & Port Stanley Ry. By working out an equitable plan in that manner, and having the bonds guaranteed there would be no particular burden on any one. The people have shown what they can do by electrification on the L. & P.S.R. When a frequent and fast service is provided, shipping and travel is encouraged, and the people are given access to the different points along the line and an outlet is provided for the merchandise of the city and the products of the rural parts. Moreover, the line could be made a unit in the provincial hydro electric radial scheme, and in my opinion would bring added prosperity and great benefits to all."

Nova Scotia Tramways and Power Co., Limited.

All arrangements were completed and the documents filed, Jan. 12, transferring the Halifax Electric Tramway Co.'s property, franchises and assets to the Nova Scotia Tramways & Power Co. This transfer terminates the contest which has been carried on for nearly three years by the Halifax City Council in the N. S. Legislature and elsewhere to prevent the sale of the local company. The N.S.T. & P.Co. has a capitalization of $5,000,000, equally divided between preferred and common stock, and has power to issue $10,000,000 of bonds. The officers and directors are: President, E. A. Robert, Montreal; Vice President, O. E. Smith, Halifax; other directors: W. G. Ross, F. H. Wilson, J. W. McConnell, Montreal; H. H. Smith, W. H. Covert, K.C., H. R. Mallison, Halifax, and P. J. McIntosh, New York.

Halifax Electric Tramway Co. shareholders have received notification that on a valuation of $203.50 a share they can exchange their stock for N.S.T. & P. Co.'s stock on the basis of 75 for the new company's preferred and 40 for the new company's common stock. Of the 14,000 shares, it is stated that all but 2,500 are owned by the controlling interest. The N.S.T. & P.Co. has issued $2,250,000 of bonds, $1,500,000 of preferred stock and $2,500,000 of common stock, part of which is being offered on the New York and Boston markets through Stone & Webster, Lee, Higginson & Co., and Potter, Choate & Webster. The bonds, which bear interest at 5% and are redeemable in 1946, are being offered at 95½; and 6% cumulative preference stock is being offered at par with a bonus of three shares of common stock for every 10 shares of preferred stock. Data furnished by President Robert, in a letter to the underwriters, show a new high record of earnings in the 12 months to Oct. 31, 1916, when gross earnings were $759,513 and net from operation $342,897. After allowing for fixed charges the company's surplus before dividends is given as $230,397, against $90,000 required for dividends on the $1,500,000 preferred stock. This would leave a surplus of $140,397 for the new common, equal to earnings at the rate of 5.6%.

In addition to the Halifax Tramway Co. properties, the company has taken over the Gaspereaux hydro electric proposition, originally owned by the Nova Scotia Light & Power Co., and it is said that the survey work on this hydro electric development will be placed in hand at once. The new company proposes to engage additional experts to thoroughly study the tramway, light and power requirements of the district and to inaugurate such improvements as may be found necessary to meet every demand and provide for ample future development. The Gaspereaux plant will, it is estimated, develop 12,500 h.p.

In connection with the improvement of the existing plant it is reported that a section of the new boiler equipment being installed at the power house is now in operation, as well as the new 4,000 h.p. turbine, and it is expected that a new and modern switchboard will be completed and placed in service in February. The new gas plant is rapidly approaching completion and will be in operation by the end of February. Extensive construction of gas mains is being proceeded with during the winter, and practically all streets in the newer sections of the city will be laid with gas mains by the spring.

Signal Installation on Toronto Civic Railway.

The City of Toronto has had a signal installation made at the grade crossing of the Toronto Civic Ry. and the Toronto Suburban Ry. at Lansdowne Ave. and Davenport Road. Both roads are electrically operated from overhead trolley. The Toronto Civic Ry. at that point is a newly constructed double track line, and approaches from the north on a down grade the Toronto Suburban Ry.'s single track crossing. The signal system was designed to protect southbound movements on the down grade on the Toronto Civic Ry. and movements in either direction on the single track Toronto Suburban Ry., the principal features of which are as follows:—

Two low voltage d.c. operated model 2-A upper quadrant, semaphore indication signals are located on the Toronto Suburban Ry., one on each side of the crossing, and distant 80 ft. from it, governing movements over the diamond. One low voltage signal of the same type governs movements on the Toronto Civic Ry. southbound down grade track, located 270 ft. from the diamond, and adjacent to a derail mechanically operated from a style D dwarf machine. All signals stand normally clear in the 90° upper quadrant position and operate in two positions only, from horizontal to 90°. An electric lock is provided on the derail lever, preventing the closing of the Toronto Civic Ry. derail when a movement is being made over the crossing on the Toronto Suburban Ry. Single pole double throw switches are installed at each signal on the Toronto Suburban Ry., controlling the semaphore on the Toronto Civic Ry. and electric lock on derail lever. Three normally open trolley contactors were used, two on the Toronto Suburban Ry., located 20 ft .ahead of the semaphores, and one on the Toronto Civic Ry., 100 ft. beyond the crossing, the function of all being to automatically restore the system to normal condition, that is, all signals clear and derail unlocked after the passage of cars over the diamond. Model 9 d.c. 1,000 ohms relays are used to control the position of signals on both roads, operated as stick relays, and are normally energized through the stick contact, keeping all signals clear and derail lever unlocked.

The operation of the system is as follows:—The conductor of a southbound Toronto Civic Ry. car, finding the semaphore at the derail clear, closes the derail point by means of the style D dwarf machine, and in so doing breaks the control of signals on the Toronto Suburban Ry., placing them in the stop position. The car then proceeds across the dia-

mond, and upon passing under the trolley contactor beyond the crossing automatically closes the control circuit for signals on the Toronto Suburban Ry., thereby again clearing these signals and restoring the system to normal.

When making a move over the crossing on the Toronto Suburban Ry., the conductor, finding the semaphore clear, throws over the single pole double throw knife switch located at the signal, thereby placing the Toronto Civic Ry. signal in the stop position and preventing the operation of derail on that railway. Upon passing under the trolley contactor on the opposite side of the crossing the control circuit for the Toronto Civic Ry. semaphore and lock is momentarily closed, picking up the control relay which will then hold up through its own point from a constant source of power. The semaphore on the Toronto Civic Ry. again clears and the derail lever may be operated to close the derail for a movement over the crossing.

For a movement in the opposite direction on the Toronto Suburban Ry., the same procedure is gone into through the contactor on the far side of the crossing serving to automatically restore the signal on the Toronto Civic Ry. to the clear position and unlock the derail.

Power for restoring all control relays is obtained from the trolley wire through the contactors and a suitable resistance to lower the trolley potential to that required for the relays. Twenty-one cells of 400 a.h. caustiv soda type battery are used to supply power for the operation of signals and holding all control relays in the energized position.

The installation was made by the General Railway Signal Co. of Canada, Ltd., Lachine, Que.

The Toronto City Council and Electric Railways in the City.

The Toronto City Council is applying to the Ontario Legislature for an act which, among other things, affects the city's relationships with the Toronto Ry., the Toronto & York Radial Ry. and the Toronto Suburban Ry. The following powers are asked: To require the Toronto Ry. to build and place in operation during 1917 100 new cars and an additional 100 during 1918, and in default of so doing to pay a fine of $100 a day for every car less than the said numbers.

To authorize the city to acquire by expropriation or otherwise the portion of the Toronto & York Radial Ry. within the city limits on Yonge St., together with all real and personal property, and all franchises connected therewith; to construct a double line of railway upon Yonge St. from the T. & Y.R.R. southern terminus to the city's northern limits; to borrow money to enable the city to finance the purchase and construction, and to authorize the city to grant running rights over the line to the T. & Y.R.R.

Cleaning old ballast is done by the Kansas City Railways by means of a portable rotary screen made out of an old concrete mixer by substituting a revolving screen for the mixing trough and blades. The screen is 6 ft. long and tapers from 18 in. diameter at the motor end to about 3 ft. at the discharge end. The same gasoline engine that formerly drove the mixer now furnishes motive power for the screen. The machine is mounted on a portable steel-wheeled truck. In view of the present high cost of ballast rock, this device is a money saver.

British Columbia Electric Railway's Annual Report.

Following is the director's report for the year ended June 30, 1916:

The following charges have been made against revenue account for the year:—

Provision for renewals maintenance		£102,236 19 0
Provision for income tax		10,000 0 0
Addition to capital amortization fund		2,655 13 4
		£114,892 12 4
The net revenue for the year, after making the above deductions, amounts to		£134,964 2 9
To which is added:		
Balance brought forward from last year		6,666 13 5
Amount transferred from reserve fund		70,000 0 0
		£211,630 16 2
And deducted:		
Interest on debenture and debenture stock for year to June 30, 1916	£132,771 2 11	
Dividends already paid on 5% cumulative preference stock for year to June 30, 1916	72,000 0 0	
		204,771 2 11
Leaving, to carry forward to next account, a balance of		£6,859 13 3

REVENUE ACCOUNT, YEAR ENDED JUNE 30, 1916.

Total income	£258,206 10 4
Registration fees	195 8 10
	£258,401 19 2
Renewals maintenance	£102,236 19 0
Directors' fees	998 0 0
Special remuneration of Assistant to Chairman	1,367 0 0
Office rent and salaries, printing and stationery, advertising, general, legal, travelling, audit and agency expenses	5,306 1 1
Income tax provision	10,000 0 0
Trustees' fees	874 3 0
Capital amortization fund	2,655 13 4
Balance	134,964 2 9
	£258,401 19 2
Balance	£134,964 2 9
Balance from last year	6,666 13 5
Transfer from reserve fund	70,000 0 0
	£211,630 16 2
Interest on 4½% 1st mortgage debentures	£9,715 9 2
Interest on 4½% (Vancouver Power) debentures	4,558 10 0
Interest on 4½% perpetual consolidated debenture stock	118,497 3 9
Balance carried to balance sheet	78,859 13 3
	£211,630 16 2

EXPENDITURE ON APPROPRIATIONS ON CAPITAL ACCOUNT, YEAR ENDED, JUNE 30, 1916.

Rolling stock	Credit $ 4,925.07
Track extensions	24,811.31
Lighting and power extensions	38,892.68
Steam plant	Credit 4,265.98
Lands and buildings and bridges	Credit 4,974.38
Electrical machinery	Credit 11,477.39
Extending light and power system	13,905.05
North Vancouver, rolling stock, meters, transformers, and initial installations	Credit 476.92
Sundries	8,205.70
Railway feeders	503.12
Automobiles	5,652.05
	$65,850.17

In order to make the above dividend payments it has been necessary to transfer £70,000 from the reserve fund. The most determined efforts have again been made by the board and management to curtail expenditure in every direction. Operating and all other expenses have been rigidly controlled. The capital expenditure of the railway and subsidiary companies during the year was $134,900, compared with $875,558 in the previous year. The General Manager reports that the property has been well maintained, and none of the economies effected have in any way impaired the efficiency, safety or general upkeep of the plant.

The reduction in the population, the reduced spending capacity of the citizens, the continuance of the unfair competition of jitney cars, together with the greatly increased cost of all supplies, are responsible for the decrease in the revenue. About 35,000 soldiers have left British Columbia for overseas service, of whom probably 25,000 have left the territory served by the company, and a further large number of people more or less directly or indirectly dependent on them have also left. It can safely be estimated that, as compared with 1914, the population served by the company has decreased by 30%. The railway business also continues to suffer severely from the competition of jitney cars. Since Jan. 1, 1916, this competition has been less acute than in the previous year, but it is estimated that these cars are still depriving the company of earnings amounting to approximately $350,000 a year. The various public services furnished by the company, including the railway service, have been fully and efficiently maintained, but with no improvement in the jitney situation in prospect, the necessity of curtailing the car services has become urgent.

The earnings from freight show an encouraging increase during the year, and this class of traffic promises to become an increasingly profitable part of the company's business. The company's financial position remains satisfactory. In spite of the present adverse situation there are indications of an improvement in commercial and industrial conditions in British Columbia, and with these the company's prosperity is closely bound up. The net earnings for the first four months of the current year show an encouraging increase of over £30,000, and the directors are not without hope that the profits of the current year will be sufficient to cover the debenture interest, and also the dividend on the 5% cumulative preference stock, without further trespassing on the reserve fund. The directors think that the company's financial position justifies the payment of the dividend on this stock for the current year, and a resolution will be submitted to the stockholders approving of this payment being made, and authorizing the directors to draw upon the reserve fund, if necessary, for that purpose. The directors are unable to hold out any hope of the payment of a dividend on the preferred ordinary or deferred ordinary stocks for the current year.

R. H. Sperling, having been granted a commission in the army, has retired from the board, to the great regret of his colleagues. He has accepted the position of adviser to the board, and thus the advantage of his knowledge of the company's affairs, gained as General Manager and in other executive positions, will still be available. Sir W. M. Aitken, M.P., and John Davidson have accepted seats on the board. A resolution will be submitted to the stockholders to increase the number of directors to nine, and, if approved, Sir Wm. Mackenzie, who, on the invitation of the directors, has expressed his willingness to accept a seat on the board, will be elected. He is President of the Toronto Ry., the Toronto Power Co., the Winnipeg Electric Ry., and other large public utility enterprises in Canada, and the directors are desirous of securing for the company the advantage of his wide experience. G. P. Norton and H. G. Brown, who are due to retire at the annual general meeting, and Sir W. M. Aitken, and John Davidson, who retire in accordance

with the articles of association, offer themselves for re-election. The directors desire to express their appreciation of the very valuable services rendered during a most trying year by the General Manager and other responsible officers, and also of the hearty co-operation of the whole staff.

Three Rivers Traction Co's Bonus for Motormen.

The Three Rivers Traction Co., which operates a line in and around Three Rivers, Que., has had in force for some little time a bonus system for motormen which is working very satisfactorily. The management has favored us with the following information in regard to it: "Prior to the bonus system being inaugurated, there was an alarming frequency of accidents to pedestrians and teams, and to our equipment, so much so, that the insurance company carrying the risk threatened to cancel it. We then decided that we would try the effect of a monthly bonus to our motormen for good operation, and we said to them that we would give a bonus of $2.50 a month to each motorman who would show, at the end of each month, that there was no well founded cause for complaint against his treatment of the public, or in his operation of the cars and care of the company's property. The effect of this offering has been very marked, and there was almost a cessation of accidents. The improvement thus started has now been continued about three months. I am satisfied that the offer of the bonus did it. We are very strict in considering a man's record for the month, before allowing the bonus. If he is at fault in any way, he loses it, so that it cannot be considered a regular perquisite. The men know they are obliged to earn it."

Port Arthur Civic Ry.—In a review of the Port Arthur, Ont., public utilities for 1916, the News-Chronicle says the number of employes on the Port Arthur Civic Ry. is 55, who were paid during the year $52,645.20. The revenue from the railway was $105,901.73. Excellent cars for one-man operation have been provided by remodelling single truck cars, and the article goes on to state: "Every effort possible is being made to conserve the rolling stock, which is now believed to be in better condition than that belonging to any other road in the Dominion. Previously many of the cars and equipment were left exposed to the elements during the year when not in use. To eliminate this condition two metallic sheds were erected at a cost of $3,300, and now all are stored under shelter. In order to prevent wear and tear on the cars and to give the public a ride from which jars and bumps are absent, the roadbed on the main line from McVicar St. to Bay St., along Cumberland St., is being repaired. During last summer about $3,000 was spent in this work, which has been completed from McVicar St. to Arthur St. This sum, however, has provided the material necessary for the completion of the work."

Quebec Ry., Light & Power Co.'s Traffic.—A Quebec press report says that 7,396,331 passengers were carried on the company's city lines in the month ended Dec. 31, against 6,566,621 in the same period of 1915. On the Montmorency Division 1,200,214 passengers were carried in the six months ended Dec. 31, against 1,043,803 in the same period of 1915.

Mainly About Electric Railway People.

D. M. Mawhinney, formerly with the Winnipeg, Selkirk & Lake Winnipeg Ry., is reported to have been appointed Engineer for Rockwood Municipality, Man., with office at Stonewall.

C. W. Hartman has been voted $250 by the Brantford, Ont., City Council in addition to the $250 he is paid as a member of the Brantford Municipal Railway Commission, for services as Manager.

G. Gordon Gale, M.Can.Soc.C.E.
Vice President and General Manager, Hull Electric Company.

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W. G. Murrin
Assistant General Manager, British Columbia Electric Railway.

F. W. Whitridge, President, Third Avenue Ry., New York, who was also a railway lawyer and writer on political economy, died there recently, aged 64, following an operation for appendicitis.

Ralph M. Reade, Superintendent, City and Quebec County Lines, Quebec Ry., Light & Power Co., contributed a spirited poem, "Make the British Spirit Tell," to a Quebec daily paper recently.

I. L. Matthews was re-elected a member of the Public Utilities Commission at Port Arthur, Ont., Jan. 1, and **M. C. Campbell** was elected to succeed W. P. Cooke, who was Chairman of the Commission from its inception.

J. T. Kemp, General Superintendent, Sherbrooke Ry. & Power Co., having resigned, **F. C. Chisholm** has been appointed Power Superintendent, and **F. X. Couture** has been appointed Railway Superintendent, with offices at Sherbrooke, Que.

William H. Dinsmore has been appointed Traffic Superintendent, British Columbia Electric Ry. From Nov. 1, 1909, to Nov., 1915, he was Inspector; Nov., 1915, to Mar., 1916, Chief Inspector, and since Mar., 1916, acting Traffic Superintendent.

A. D. MacTier, General Manager, Eastern Lines, C.P.R., has been elected President, Hull Electric Co., succeeding W. R. Baker, who resigned from the directorate on retiring from the C.P.R. service, in which he was Secretary of the latter company and Assistant to the President.

R. H. Sperling, formerly General Manager, British Columbia Electric Ry., at Vancouver, and latterly Assistant Chairman, and a director, in London, Eng., has resigned those positions on taking a commission in the British army, and has been appointed one of the advisers to the directors.

F. C. Chisholm, Superintendent, Southern Division, Southern Canada Power Co., St. Johns, Que., was presented with a gold watch and chain recently by a number of his friends there, on leaving St. Johns for Sherbrooke, where he has been appointed Power Superintendent, Sherbrooke Ry. & Power Co.

Mrs. M. B. Jones, widow of the late Capt. J. T. Jones, President, Niagara Gorge Rd., Niagara Falls, N.Y., Gulf and Ship Island Rd., and the Gulfport and Mississippi Coast Traction Co., Gulfport, Miss., has been elected President of the second company, and will probably have charge of the operation of the third one mentioned.

G. Gordon Gale, M.Can.Soc.C.E., heretofore General Manager and Chief Engineer, Hull Electric Co., has been appointed Vice President and General Manager, succeeding E. W. Beatty, K.C., Vice President and General Counsel, C.P.R., who, however, remains a director. Mr. Gale will continue to attend to the engineering work. He was, prior to 1907, Assistant Engineer, Canadian Rubber Co.'s electrical plant; from 1907 to Nov. 1908, Superintendent of 1909, acting General Superintendent, Power, Hull Electric Co.; Nov. 1908 to same company; 1909 to June 1914, General Superintendent, same company. He is a graduate of McGill University, an associate member of the Institute of Electrical Engineers, and a member of the Canadian Society of Civil Engineers.

Sir Albert H. Stanley, who was appointed President of the Board of Trade and a member of the British Cabinet recently, in the reconstruction of the British Government, has since been elected a member of Parliament for Ashton under Lyne, Eng., and, following the usual custom, has resigned all directorships held by him. He was born in England, and entered the service of the Detroit (Mich.)

City Ry. in the horse car days. In 1902 he was appointed Assistant General Manager of the railway department of the Public Service Corporation of New Jersey, in 1903 was appointed Manager, and in Jan., 1907, General Manager. He resigned in that year, on his appointment as General Manager of the Underground Electric Railways, London, Eng. He was Managing Director, London Underground Electric Railways, London United Tramways, Metropolitan District Ry., and the London General Omnibus Co.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies:

	Nov.1916	Nov.1915	Jan. 1 to Nov.31,'16	Jan. 1 to Nov.31,'15
Gross	$604,576	$562,782	$2,807,146	$2,636,479
Expenses	495,039	478,643	2,403,806	2,407,173
Net	109,537	84,139	403,340	229,306

Cape Breton Electric Co.:

	Nov.1916	Nov.1915	12monthsto Nov.30,1916	12monthsto Nov.30,1915
Earn'gs	$34,904.09	$33,011.80	$389,650.16	$350,740.33
Exp. .	19,083.26	17,789.98	228,544.47	205,579.75
Net . .	15,820.83	15,221.82	161,105.69	145,160.58

Detroit United Ry.—Shareholders have been notified that at the annual meeting to be held in Detroit, Mich., Feb. 6, they will be asked to authorize the increase of the capital from $12,500,000 to $25,000,000. The object is to raise funds for the general improvement and betterment of existing lines and for the building of a number of extensions. The company owns the Sandwich, Windsor & Amherstburg Ry. in Canada.

Edmonton Radial Ry.—In a recent interview, Commissioner Harrison, who has charge of this line for the Edmonton, Alta., City Council, is reported to have said: "It would be well if the public, just for once, would look upon the railway in the light of a private enterprise, and see how it worked out. Take November, for instance, the street railway, working as a private company, could have paid 4% on its capital investment and still had a little to spare. The capital investment is $3,000,725.76, and the yearly interest at 4% would amount to $120,029.13, meaning a monthly charge of $10,002.42. Other monthly charges would be as follows: Maintenance, $3,607; operation, $16,747.65; power charges, $8,004; depreciation, $2,154.44; total, $40,516.38. Deducting this amount from the November receipts leaves $379.77 to the good, and makes an excellent showing and example of the working of the utility, supposing that it was in private hands and not municipally owned, which forces the placing aside of payments into the sinking fund."

Guelph Radial Ry.—A dividend at the rate of 4½%, totalling $7,680.39, for 1916, has been paid.

Hamilton St. Ry. earnings for 1916 were the greatest in its history, $706,739, against $569,694 for 1915. The city's percentage for 1916 was $56,543, agaianst $45,576 in 1915.

Kitchener & Waterloo St. Ry.—V. S. McIntyre, Superintendent, reported to the Kitchener, Ont., Light Commission, Jan. 11, that during Dec., 1916, the passengers carried numbered 119,035, the largest number carried in the same month since the council took over the line. The net profit for Dec., 1916, was $993.

Montreal Tramways Co.—An issue of $2,000,000 first and refunding 5% gold mortgage bonds has been placed on the market at 96½ and interest. The amount of bonds outstanding at the time of the last annual statement was $13,335,000. Capital expenditure amounting to about $1,000,000 had been incurred up to June 30, which this issue will cover, and it will also provide for capital expenditure incurred since that date.

Montreal Tramways Co.:

	Dec. 1916.	Dec. 1915.
Gross earnings	$615,448	$541,162
Operating expenses, taxes, etc.	376,123	319,041
Net earnings	$239,325	$222,121

Saskatoon Municipal Ry.—The following figures have been reported to the Saskatoon City Council for the week ended Jan. 6, 1917, and for the corresponding week in 1916:

	1917.	1916.
Receipts	$4,042.35	$3,709.30
Average receipts	577.48	529.60
Number passengers	82,090	73,690
Number passengers daily . . .	11,727	10,526
Receipts to date	$3,730.70	$2,906.45
Average number of cars daily	14 2-7	
Average per car	$40.42	$42.15

Toronto Railway:—

	1916	City percentage	1915	City percentage
Jan.	$473,784	$68,847	$471,226	$70,486
Feb.	470,704	70,614	440,313	66,047
Mar.	518,555	97,237	488,468	93,141
Apr.	496,172	99,234	467,701	93,540
May	500,516	100,103	468,953	93,790
June	467,086	93,417	450,582	90,116
July	469,845	93,969	449,108	89,821
August . . .	474,824	94,964	447,968	89,593
Sept.	506,621	40,530	489,574	39,166
Oct.	487,954	39,036	461,682	36,934
Nov.	430,049	48,892	472,759	46,305
Dec.	526,795	63,247	501,962	58,715
	$5,822,905	$910,090	$5,610,296	$867,654

The total receipts in 1914 were $6,052,512, and the city percentage was $955,740. The receipts for 1914 included $18,000 from post office arrears from Apr., 1913, to Sept., 1914, the city percentage being increased $1,800 from this source.

Toronto Ry., Toronto & York Radial Ry., and allied companies:

	Nov.1916	Nov.1915	Jan. 1 to Nov.31,'16	Jan. 1 to Nov.31,'15
Gross	$911,829	$851,113	$9,825,053	$8,793,719
Expenses	474,520	397,383	5,032,010	4,391,382
Net	437,309	453,730	4,793,043	4,402,337

Winnipeg Electric Ry:

	Nov.1916	Nov.1915	Jan. 1 to Nov.31,'16	Jan. 1 to Nov.31,'15
Gross	$282,899	$323,025	$3,023,170	$3,122,620
Expenses	181,267	188,067	1,946,412	2,136,092
Net	101,632	134,958	1,076,758	1,086,528

The railway earnings for the year ended Dec. 31, 1916, were $2,075,343, the percentage to which the city is entitled under its agreement being $10,767.

Sherbrooke Ry. & Power Co.'s Absorption.—It is rumored in Montreal that the Sherbrooke Ry. & Power Co. is about to be absorbed by the Southern Canada Power Co., which is building a transmission line from Windsor Mills to Sherbrooke, Que., and with power purchased from the Shawinigan Co., it will be able to provide a much greater supply of power in the Sherbrooke district, where it is much needed. C. J. McCuaig is President of both the Southern Canada Power Co. and the Sherbrooke Ry. & Power Co. W. C. Hawkins, Vice President and Managing Director, Dominion Power & Transmission Co., Hamilton, Ont., was added to the Southern Canada Power Co.'s board recently.

Guelph Radial Ry.—The Guelph City Council is asking the Ontario Legislature to dissolve the present elective board of directors of the G.R.R., and to declare the council to be elected Jan. 1, 1918, and its successors to be directors of the company.

Quebec Ry., Light & Power Co.—We are officially advised that the company contemplates building an extension from 3rd Ave. and 5th St., along Beauport Road to the city limits, 1.5 miles. H. G. Matthews, Quebec, is General Manager.

Electric Railway Track Laid in 1916.

The statistics of electric railway track laid during 1916, published in our January issue, only require correction in one instance, viz., that of the Edmonton Radial Ry., upon which no new work was done. We have been officially advised that the E.R.R. rents from the Edmonton Interurban Ry 1.13 miles of the track the latter has laid from St. Albert to 124th St. and 18th Ave., paying therefor 8% a year on the cost. The E.R.R. decided to extend its line on Brandon Ave east and west, the idea being to reach Elm Park, a distance of 3,000 ft., but the work has not yet been started. At Brandon St., the E.I.R. line runs straight north, and the proposed extension of the E.R.R. is to run parallel with the G.T.P.R., with the intention of reaching the latter's locomotive house and machine shops, as well as to serve the people of Elm Park.

While the London & Port Stanley Ry. laid a short piece of line on Bathurst St., between Richmond and Ridout Sts., London, Ont., as it will not be connected with the main line east of Richmon St., until the spring, the company does not include it in its mileage.

The Saskatoon Municipal Ry. laid track on the 25th St. bridge, but it is not yet connected with the city system.

Following are revised figures:

	Miles.	
Brantford & Hamilton Ry.—		
Market St. to Water St., Brantford. . . .		0.25
Calgary Municipal Ry.—		
17th Ave. and 28th St. W. to Sarcee Military Camp	3.00	
4th Ave. and Centre St. to Sunnyside	0.50	
		3.50
Hamilton St. Ry.—		
Kenilworth Ave. and Burlington St. to Barton St.		0.50
London St. Ry.—		
Egerton St. to West St.		0.41
Quebec Ry., Light & Power Co.—		
C.P.R. Cross'g to St. Charles Cemetery	0.50	
5th St. to 4th St.	1.25	
3rd Ave. to Abattoirs	0.25	
		2.00
Regina Municipal Ry.—		
C.P.R. Arcola line to 16th Ave.	0.72	
4th Ave. to Standard Ave. and Winnipeg St.	0.58	
		1.30
Sarnia St. Ry.—		
St. Clair and Christina Sts. to Clifford and King Sts.		0.50
Saskatoon Municipal Ry.—		
On 25th St. Bridge		0.23
Three Rivers Traction Co.—		
Cap de la Madeleine etxension		3.06
Toronto Civic Ry.—		
St. Clair Ave. to C.P.R. tracks on Lansdowne Ave., double track		0.61
Toronto Ry.—		
New entrance to Exhibition	1.91	
Yonge St. gap	0.14	
Woodlawn Ave. extension	0.04	
		2.09
		14.45

The London St. Ry., in addition to the new line above mentioned, laid 2,000 ft. of second track on Dundas St. from the exhibition grounds to the G.T.R. interswitching track.

The Sandwich, Windsor & Amherstburg Ry. laid 2,200 ft. of entirely new double track line on London St. West, Windsor, replacing a single track line; this, however, does not increase the company's track mileage.

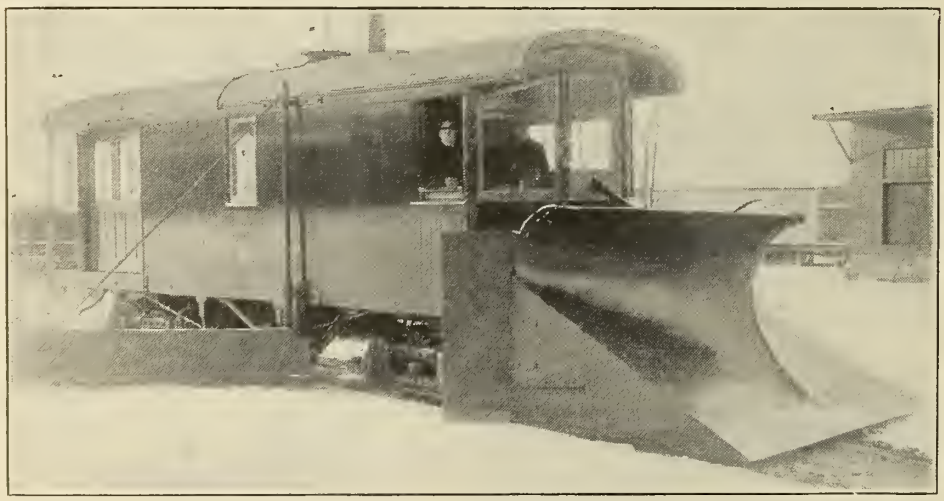
Toronto Ry. Car Barn Destroyed.—A fire broke out in the Toronto Ry. car barn, alongside the Don River, on King St. East, Dec. 28, when the sheds and about 150 cars were destroyed. It is stated that the fire was caused by an overheated stove in a trailer car. No official figures are obtainable as to the full extent of the damage, but unofficial estimates give the value of the cars and sheds with contents, anywhere between $500,000 and $1,000,000.

Combination Snow Plough and Freight Car for Three Rivers.

The Three Rivers Traction Co., Three Rivers, Que., has added a combination snow plough and freight car to its equipment. The general dimensions, etc., are as follows:

Length of body	28 ft.
Length over end sills	29 ft.
Length over all, about	38 ft.
Width of body	8½ ft.
Width over all, about	9½ ft.
Weight completely equipped for winter operations	46,000 lbs.

The body is built of wood on a composite underframe, having centre sills of 10 in. channel. The nose plough is built of steel plates and angles, and is made removable. It is raised and lowered by levers operated by a double acting air cylinder inside the car body. The small steel side wings are operated by a hand wheel inside the car body, being held out by a ratchet wheel and a special wooden dog as a safety device. The side wing plough, which is mounted on the right hand side of the car body, is operated by a hand wheel from inside of car body, and is moved in and out by a heavy steel clad ram operated by rack and pinion, and held out with a special hardwood safety dog. The car is mounted on no. 76-E-1 trucks, and equipped with a Westinghouse double end 101-B-2 quadruple motor equipment, with K-6 controllers, also a Westinghouse double end A.M.M. air brake equipment, with an extra reservoir for the plough equipment. There is a folding seat for the motorman, also track sanders, foot gongs, whistles, poling sockets, arm rest, and other small equipment. The underframe is built specially strong, to allow the car to be used to do shunting if required, when not in use as a snow plough. The accompanying illustration shows the car equipped for winter operation. It was built by Ottawa Car Manufacturing Co., Ltd.



Combination Snow Plough and Freight Car, Three Rivers Traction Co.

The Brantford Municipal Railway Commission, which manages the Brantford, Ont., Municipal Ry., is composed for 1917 as follows: W. R. Turnbull, Chairman; C. H. Hartman and F. J. Calbeak. John Creasor is Secretary.

Two men were committed for trial at Toronto, Jan. 10, for attempting to secure transportation by fraud on Toronto Ry. cars. The conductor, in collecting fares, thought that two tickets placed in the fare box looked rather flimsy and found that one ticket had been split and an attempt made to pass it as two tickets.

Vancouver's New Jitney Regulations.

After considerable discussion at several meetings of the Vancouver City Council, the bylaw as to the operation of jitneys in the city was amended in a number of details and finally passed Jan. 6. The original bylaw was passed early in 1914, and was amended June, 1915. The following are the important amendments finally assented to: Jitney licenses, without which no auto can operate as such, are increased from $25 to $30 for all 5-passenger cars. Jitney drivers' licenses are increased from $2 a year to $5. Applicants for jitney driver's license must give, in addition to their qualifications and description, three recommendations as to their character; two from ratepayers and one from the police. No applicant must be under 21 years of age. Jitney drivers must pass a medical examination as to their physical fitness, eyesight, etc., and also a mechanical examination as to their knowledge of their car, and their ability to drive. Jitney drivers must submit their cars at all times for examination by a jitney inspector to be appointed by the city, who shall be a mechanical expert in automobile matters. Every auto owner who hires any auto driver must report to the license inspector every month particulars of the drivers in his employ and give the reasons for the dismissal of any drivers in the interim. All jitneys operated between sunset and sunrise must, during such time, have the tonneau of the car adequately illuminated as long as the top of the car is up. Lighting is not imperative when the top is down. All 5-passenger jitneys must not carry more than 6 passengers, exclusive of the driver. All 7-passenger jitneys must not carry more than 8 passengers, exclusive of the driver. All jitneys of greater seating capacity than 7 passengers must not carry in excess of 50% additional passengers at any time. No jitney will be allowed to carry more than one passenger on the front seat, exclusive of the driver. (This regulation is not understood to apply to a child in arms.) All jitneys, and autos too, when the safety zones are re-established on car-line streets, must stop not closer than 75 ft. from the corner of any intersecting street on a car line and not closer than 10 ft. from the end of any safety zone. The city will furnish new route signs to all licensed jitneys, but any jitney possessing an illuminated sign approved by the license inspector, may be allowed to retain it in use. Jitney drivers, when securing their license, shall designate the fixed route on which they intend to operate and shall receive a permit from the license inspector to operate on such of the following routes as they select: No. 1—Grandview, from Twelfth Ave. east to Alma Road West, via Commercial Drive, Venables, Vernon, Hastings, Granville and Fourth Ave. No. 2—Fairview belt line as at present. No. 3—Twenty-fifth Ave. to English Bay, via Main, Hastings, Granville, Robson, Denman and Davie Sts. No. 4—Hastings Park to English Bay, via Hastings, Granville, Davie, Denman and Robson Sts. All jitneys must complete their routes, either one way or the other, but a driver shall have the privilege of taking a short cut to the terminal point, providing he proceeds in the same general direction.

The amendments were not very heartily received by the jitney men, and several meetings were held to discuss their effect upon the traffic and the action which the British Columbia Electric Ry. had taken in bringing about the amendment was criticized. The jitney men, however, on Jan. 12, decided to take up their licenses, select their routes and co-operate with the city authorities in carrying out the bylaw.

Cars for Sandwich, Windsor and Amherstburg Railway.

The S.W. & A.R., Windsor, Ont., is adding to its rolling stock 2 cars with the following general dimensions:

Length over bumpers	43 ft.	7¾ in.
Length over dashers	42 ft.	7¾ in.
Length over body	30 ft.	10¾ in.
Length of rear platform	5 ft.	7 in.
Length of front platform	6 ft.	2 in.
Width front door opening between posts		24 in.
Width rear door opening between posts	3 ft.	6 in.
Width over side sill plate	8 ft.	2 in.
Width, extreme	8 ft.	4 in.
Height bottom of sill to top of roof	8 ft.	5 in.
Height rail to bottom of sill	2 ft.	9⅜ in.
Length of cross seats		35 in.
Width of aisle		23½ in.
Seating capacity		46

They will be of the single end type and standard steel frame construction, with resistant post construction, the bodies to have plain arch roof and double trucks of 51-E-1 type, with 33 in. diameter wheels. The seats will be standard, sanitary type; upholstering in rattan; 3 illuminated type of signs in each car, one in front right hand vestibule sash, in upper part, and one at each side of body and arranged in an upper sash; hand brake at front end, operated with 17 in. diameter horizontal brake wheel placed on right hand side of front platform; headlining of ¼ in. thickness full length of car body lengthwise, and from advertising moulding to advertising moulding crosswise; safety tread at front and rear steps. On all side windows, in connection with sash arrangement, the wire mesh screen will be attached to bottom rail of sash, and this screen will automatically close opening when sash is raised. At rear end of car signal lamps will be installed. The front end will be equipped with Trolley Supply Co.'s arch head light.

The Great North Western Telegraph Co. has opened offices at Grand Beach and Victoria Beach, Man.; Brule and Lanfine, Alta., and Chu Chua, B.C., and has closed its offices at Abenakis Springs Hotel, Capucins, Dunham and Little Metis Lighthouse, Que.; Portland, Ont.; Oakland, Man.; Errington and Rosebud, Alta.; and Louis Creek, B.C.

Electric Railway Projects, Construction, Betterments, Etc.

Brantford Municipal Ry.—We are officially advised that while there is under contemplation the building of an extension of between two and three miles, it is very doubtful if it will be done this year. The principal reason for this is the difficulty of securing rails.

Edmonton Radial Ry.—Superintendent Moir laid an estimate before the Edmonton, Alta., Public Utilities Commission, Jan. 10, for a projected extension of the Bonnie Doon car line to 95th Ave., as follows: Ties, $375; 6,000 ft. of 60 lb. rails, $3,000; 30 poles and brackets, $150; grading, labor and ballast, $650; spikes, bolts and bonding, $300; total, $4,475. If the extension should be built another car would have to be purchased to give the same service as at present. Consideration was postponed until the estimates for the year are made up. (Jan., pg. 30.)

Guelph Radial Ry.—We are officially advised that the company has recently completed the placing of gas-welded bonds on a mile of track. Orders have been placed for 6,000 ft. of 80 lb., 7 in. high Lorrain section 335 steel rails for early delivery. This will be used to relay 3,000 ft. of track on Ogilvie St. A. H. Foster is Manager. (Oct., 1916, pg. 425.)

The Greater Winnipeg Waterways District Commission has under consideration a project for building an electric railway to Transcona, Man., but we are officially advised that no decision has been reached upon the matter. (Jan., pg. 19.)

Hamilton St. Ry.—The Kenilworth Ave. loop line was put into regular operation Jan. 1. The King St. West cars run along Burlington St. to Kenilworth Ave., thence along that avenue to Barton St. and back. (Jan., pg. 30.)

Hull Electric Co.—We are officially advised that the only work contemplated for 1917 is the laying of 8,660 ft. of second track and the building of a 4,800 ft. loop line. A press report credited the company recently with having decided on building two miles of new line. (Dec., 1916, pg. 503.)

London & Port Stanley Ry.—We are officially advised that while a small length of track was laid between Richmond and Ridout Sts. on Bathurst St., London, Ont., in 1916, it has not been connected up with the main line east of Richmond St. The work is expected to be finished early in the spring. (Jan., pg. 30.)

Peterborough.—The Peterborough City Council is applying to the Ontario Legislature for power to declare the Peterborough Radial Ry. a public utility in the event of the city acquiring the property and franchises; to authorize the borrowing of money to pay for the same and to give the Public Utilities Commission power to take over and operate the railway. (Oct., 1916, pg. 421.)

Quebec Ry., Light & Power Co.—Track laying on the Limoilou extension is reported to be completed and a temporary service was started Jan. 8. The cars run up 3rd Ave. and 18th St. to Charlesburg Road and connect with the Stadacona line. (Jan., pg. 30.)

St. John Ry.—It is generally understood that the company has purchased the Victoria wharves and maritime warehouses at St. John, N.B., which they have hitherto held under a long unexpired lease. The company is tearing down certain of the Worden buildings thereon, owing to them being in a dangerous condition. It has not been announced what use will be made of the property. (Jan., pg. 30.)

Toronto Civic Ry.—The new car line on Lansdowne Ave., 0.61 mile long, was placed in operation Jan. 16. Two cars are being operated on it, giving a six minute service. The line extends from the St. Clair Ave. line south to the C.P.R. track.

The city now operates five lines, having a total length of practically 20 miles, as follows: Gerrard St., Danforth Ave., St. Clair Ave., Bloor St. and Lansdowne Ave.

Toronto Ry.—It is expected that the company will start the Pape Ave. line about April 1. This line is to be built by direction of the Ontario Railway and Municipal Board from Gerrard St., northerly along Carlaw Ave. to Guelph Ave., easterly along Guelph Ave. to Pape Ave., and northerly along Pape Ave. to Danforth Ave. A Y is to be put in at the intersection of Pape and Hazlewood Aves. The line is to be completed and ready for operation July 1. (Apr., 1916, pg. 155.)

Toronto Suburban Ry.—The Ontario Legislature is being asked to extend the time for the completion of the Lambton-Guelph line now under construction, and of the extensions authorized to be built under the company's various acts.

Toronto Suburban Ry.—The Toronto City Council is applying to the Ontario Legislature for authority to enter into an agreement with the company for an alternative route in substitution for the one on Davenport Road easterly from Bathurst St., as covered by the agreement of Sept. 4, 1899. The time originally set for the construction of this section of the line by the company, expired Jan. 1, and prior to that date the company was proceeding with the construction, as first planned. Certain residents along the route objected to the construction of the line, and waited on the city council, suggesting another route on Bridgman St., and also that while the matter was under consideration, the council should grant the company a further extension of time to July 1. This was agreed to, and at the council's request the company suspended operations on the construction of the extension.

Transcona Electric Ry.—Application is being made to the Manitoba Legislature for the incorporation of a company with this title to build a railway from Winnipeg to Transcona and throughout the Town of Transcona. Moran, Anderson & Guy, Winnipeg, are solicitors for the applicants. G. Anderson, K.C., a member of the firm, is Counsel for the Winnipeg Electric Ry. Local reports state that it is expected to start construction work early in May and to have the line in operation by the autumn. The plans are said to be prepared and all ready for proceeding with the work. It is further stated that an hourly service will be given between 6 a.m. and midnight, but that it has not been decided whether the cars will run into St. Boniface only, or right through to Winnipeg. Jan., pg. 30.)

The Sherbrooke Ry & Power Co., Sherbrooke, Que., may, according to a press report, suspend its electric railway service, wholly or partially, for a time, to release power for pressing needs of munition manufacturers.

Ontario Hydro Electric Radial Railway Bylaws.

Voting took place, Jan. 1, in the municipalities concerned in the proposed construction of radial electric railways by the Hydro Electric Power Commission of Ontario, between Port Credit and St. Catharines, and between Welland and Bridgeburg. The first named line, which it is proposed to build, is intended to connect at Port Credit with the proposed through line from Toronto to London, and to run through Hamilton to St. Catharines and eventually to Niagara Falls. Of the 16 municipalities voting on the bylaws to authorize the commission to proceed with the construction, 13 voted in favor, and in three, Hamilton City, Nelson Township and Saltfleet Township, the bylaw was defeated. The voting in Hamilton was 3,192 for and 3,626 against; in Nelson Tp., 90 for, and 101 against; and in Saltfleet Tp., 104 for, and 241 against. The estimated cost of the construction of the first named line is $11,360,363, and of the second, $2,208,717. It is expected that arrangements will be made for the resubmission of the bylaw to the ratepayers in Hamilton, Nelson Tp. and Saltfleet Tp. at an early date, but it is said that no actual move towards construction will be made until after the war.

Following is a record of the voting in the various municipalities for the respective bylaws.

Port Credit-St. Catharines Line.	For.	Against.
Toronto Tp.	237	125
Trafalgar Tp.	138	43
Nelson Tp.	90	101
East Flamboro Tp.	144	117
Barton Tp.	416	374
Saltfleet Tp.	104	241
North Grimsby Tp.	194	140
Clinton Tp.	150	59
Louth Tp.	298	7
Grantham Tp.	382	95
Grimsby Village	159	59
Beamsville Village	165	23
Oakville	268	37
Burlington	250	123
Hamilton	3,192	3,626
St. Catharines	1,049	375
Totals	7,236	5,545
Welland-Bridgeburg Line.		
Crowland Tp.	191	80
Humberstone Tp.	328	91
Bertie Tp.	538	114
Humberstone Village	146	4
Port Colborne	216	3
Fort Erie	78	8
Welland	452	85
Bridgeburg	148	7
Totals	2,097	392

The St. Catharines City Council, in view of the adverse vote in Hamilton, has requested the Hydro Electric Power Commission to advise whether the proposed railway could be constructed from Port Credit via Burlington Beach to St. Catharines, thus avoiding passing through Hamilton, and as to what saving in the cost of construction and operation would be effected by adopting such route; also as to the saving of time and reduction of rates.

Fares in Port Arthur.—The Port Arthur, Ont., Public Utilities Commission devoted some time, on Jan. 9, to the consideration of fares on the Port Arthur Civic Ry., which have been causing some controversy of late. Chairman A. E. Wideman and Commissioner Rapsey were appointed a committee to investigate the whole matter in conjunction with the manager of the railway. It was pointed out that the passengers carried daily averaged one half of the population, and it was stated that while the average fare received was 3.22 cents, it cost 7.62 cents to carry each passenger.

Electric Railway Notes.

The Montreal Tramways Co. has ordered 25 motor cars and 25 trailer cars to be built in Philadelphia.

The Montreal and Southern Counties Ry. has ordered 3 motor and 3 trailer cars from Ottawa Car Manufacturing Co.

The Port Arthur, Ont., Public Utilities Commission has declined to grant the Salvation Army certain free advertising privileges on the electric railway cars.

The Guelph Radial Ry., owned and operated by the city of Guelph, Ont., has advanced its conductors' and motormen's wages 1c an hour, making them as follows: 1st year, 22c; 2nd year, 23c; 3rd year, 24c.

The British Columbia Electric Ry. announces that as the result of the experiment tried during last summer clear glass will be substituted for the opaque glass at present in use on front windows of its cars.

The Vancouver City Council is applying to the British Columbia Legislature for power, among other things, to enable it to make a distinction between taxi-cabs and jitneys as to license fees, and to enable it to operate motor busses.

The recent fire at the Preston Car & Coach Co.'s works, Preston, Ont., destroyed among other rolling stock: 2 suburban electric cars for Toronto Suburban Ry., 2 suburban electric cars for Niagara, St. Catharines & Toronto Ry., and 1 gas electric car.

The Saskatoon, Sask., City Council has under consideration a suggestion by Commissioner Yorath that the city, owing to the largely increasing cost and the inability of manufacturers to fill orders on short notice, undertake the building of cars for the Saskatoon Municipal Ry.

One of the first acts of the Nova Scotia Tramways & Power Co.'s directors on taking over the Halifax Electric Tramway Co.'s property, Jan. 10, was to authorize a 10% increase of wages of conductors and motormen, to date from Jan. 1. The wage agreement with the men had until May 1 to run.

The Hamilton St. Ry. reported recently that it was several men short of the number necessary to maintain a normal street car service. In addition to the shortage of young men going into the service, the company is losing men who have been with it several years, who are going to other and at present better paid lines of work.

The Lake Erie & Northern Ry., on Jan. 22, put a new time table into effect, under which the first northbound train leaves Brantford at 7.47, instead of 8 a.m., and the first southbound train at 7.50. There is no other alteration of the northbound trains, but all southbound trains except the first leave Brantford at 15 minutes before the hour, instead of on the hour as previously.

The Edmonton, Alta., City Council had soldiers' wives and children transported free on the Edmonton Radial Ry. for a Christmas entertainment. Eight special cars were in operation for five hours on the service at cost of about $120. Superintendent Moir has asked the Commissioners whether the E.R.Ry. is to be charged with this or whether it is to be paid out of some other city fund.

The Quebec Ry., Light & Power Co. has put in operation a reduced fare on its line from Sillery into Quebec. The straight fare will be 7c, but 15 tickets will be issued for $1, and there will be the usual transfer privileges. The old fare was 5c from Sillery to Maple Ave., and city rates inside the limits, making the total fare a little over 9c, where city tickets were used and 10c otherwise.

The British Columbia Electric Ry. has erected two electrically illuminated maps, each 5 x 10 ft., at the approach to its interurban station on Carroll St., Vancouver, showing in colored lights the various lines operated by the company. One map shows the lines between Vancouver and Steveston and Chilliwack, with the New Westminster connections, and the other shows the city lines with outside connections.

City Commissioner Harrison reported to the Edmonton, Alta., Board of Trade recently that an effort had been made to manufacture brake shoes for street cars at the city foundries, but it had been found that they were either too hard, so that they made unreasonable wear of the car wheels, or that they were too soft. The Board of Trade proposes to have another test made to introduce the manufacture into the city.

The Mayor of Vancouver, in the course of his inaugural address to the City Council on Jan. 15, said: "As the agreement with the B. C. Electric Co. expires at an early date, it is imperative that this year's council formulate a definite policy in this connection, the preliminary steps having been taken by last year's council, in the acquirement of certain options on power sites and by applying for the necessary legislation."

The Hamilton & Dundas St. Ry. has entered into an agreement with the Toronto, Hamilton & Buffalo Ry. for making a connection between the two companies' lines between Hamilton and Dundas, and for the operation of the T.H. & B.R. over the H. & D. St. Ry. tracks into Dundas, for freight purposes only. The agreement is to run for 50 years, and because it is for that period and not for one of less than 21 years, it is necessary to have it ratified by act of parliament.

The Edmonton, Alta., City Council has authorized application to be made to the Alberta Legislature for power to pass a bylaw to regulate the jitney traffic in the city. The city's Public Utilities Commission desires to have the jitney traffic restricted to streets upon which the Edmonton Radial Ry. does not operate, and as a basis of framing a bylaw the regulations at present in force in Calgary, Alta., were on Jan. 13, recommended for adoption.

The Montreal & Southern Counties Ry. has ordered 3 motor and 3 trailer passenger cars from the Ottawa Car Manufacturing Co. They will be 55 ft. long over buffers, and 8 ft. 1½ in. wide, equipped with lavatory accommodation, water coolers, hot air forced draught heaters, etc. The electrical equipment will be Westinghouse 306 interpole motors with H. L. multiple control, and the air brake will be Westinghouse AMM type. The governors on all cars will be operated through a master governor on the leading car of each train.

Port Arthur Civic Railway is managed by the Port Arthur Public Utilities Commission, which is composed of: A. E. Wideman, chairman; I. L. Matthews, G. H. Rapsey, M. C. Campbell and Mayor Cowan. At the civic elections in January, I. L. Matthews was re-elected a member of the commission, and M. C. Campbell was elected to succeed W. P. Cooke, who was chairman of the commission from its inception in January, 1915.

United States Electric Railway Earnings, Etc.

The American Electric Railway Association has prepared the following comparison of statistics for the years ended June 30, 1915 and 1916:

	1916.	Increase over 1915, per cent.
Operating revenue	$208,641,000	3.47
Transportation revenue . . .	202,822,000	3.54
Other ry. operating revenue	5,813,000	.87
Operating expenses	126,352,000	2.40
Net earnings	82,289,000	5.15

Reduction of Speed on Galt, Preston & Hespeler St. Ry.—The Ontario Railway and Municipal Board, as a result of a visit paid to Kitchener by Vice Chairman A. B. Ingram, passed the following order, Jan. 2, re accident in the city of Kitchener on Galt, Preston & Hespeler St. Ry. and Preston & Kitchener St. Ry. Co.'s line, resulting in the death of Jas. Gancie on Nov. 18, 1916: "Upon consideration of the company's report and of the finding of the coroner's jury, and the board having investigated the facts in connection with the accident, and having inspected the railway in Kitchener and its operation, the board orders that no car of the said companies be operated at a speed exceeding 15 miles an hour between the southerly limit of the city of Kitchener and the point where the companies' line connects with the Kitchener & Waterloo Ry. Co.'s line."

The Ottawa Electric Ry. Bulletin, Christmas number, was a considerably enlarged issue, containing among other matter a Christmas greeting from the President, T. Ahearn; portraits and biographies of "Pioneers of the Electric Railway Industry in Canada," viz., T. Ahearn, W. Y. Soper and J. D. Fraser, who are the company's President, Vice President and Secretary-Treasurer respectively; a historical sketch of the company, an illustration of one of its first sweepers in 1891; portraits and biographies of old timers of 1891, "still in the service and going strong," and portraits of the company's contingent in the 207th Battalion, C.E.F., besides a lot of other interesting matter.

Overcrowding on Toronto Ry. Cars is again occupying the attention of the city council. The Medical Officer of Health was instructed to proceed against the company for endangering the public health by overcrowding its cars, and he instructed his staff to obtain evidence to enable a prosecution to be undertaken, after which a charge was laid and the case remanded by the police magistrate. The question of overcrowding has been before various relays of city councils in Toronto for many years, and some hope is still entertained that some day a bright idea on the subject may enter the minds of those in authority, which, when put into practice, would cause overcrowding to cease.

The Toronto Ry. was sued recently by M. J. Quinn, Manager, National Equipment Co., Toronto, for $5,000 for alleged injury to his reputation and expense incurred, respecting a charge in the local police court of disorderly conduct, he having advised some women who were injured when alighting from a street car not to give their names to the conductor. He claims that some years ago, while acting for the Ontario Railway and Municipal Board, he reported adversely on certain fenders used on the company's cars, and that since that time he has been a marked man. The jury awarded him $528.25 damages.

Marine Department

The Dominion Wreck Commissioner and the St. Lawrence Pilots.

At the conclusion of an investigation at Montreal, recently, the Dominion Wreck Commissioner, Capt. L. A. Demers, made the following statement: The court at this juncture wishes to comment favorably on the work of pilots, both of the Montreal and Quebec Districts, in connection with last season's work, which has been free from serious accidents, and advises them that there must be no relaxation in fulfilling their responsibilities. The season is not yet ended. The reputation of the St. Lawrence route must be without a stigma. Masters of vessels look to the pilots as their advisers, and practically pin their faith on them, hence it devolves on pilots to execute all prudence and prevent damage and delays, which are as important almost, even if no damage is sustained by the vessels. This court has a mandate to fulfill, and it is to penalize those who are found to be lacking in performing their duties in a practical common sense manner. The St. Lawrence is well buoyed, lighted and equipped, and there is nothing wanted which modern ingenuity, with a view to facilitating navigation, could devise. The pilotage is efficient, and sober and intelligent men form the association. Yet with all this, there must not be a moment of forgetfulness or inattention found in the pilots' actions. Varying climatic conditions must be expected and met with foresight, judgment and proper action. The court is deeply imbued with the idea that there must be no cause for reflection to be made on the administration and composition of the men engaged in bringing vessels to our ports, and trusts that henceforth pilots will be thoroughly awake to their responsibilities.

Long Sault Development Co's Project.

Canadian Railway and Marine World for January referred to the final quashing of this project, the United States Supreme Court having dismissed the company's appeal against the New York courts' annulment of its franchise, and mention was made of the fact that the project had been persistently fought at every stage by the Dominion Marine Association and the Shipping Federation of Canada, on the ground that it would interfere considerably with the safe navigation of the St. Lawrence River. The Dominion Marine Association, particularly, performed very important work in this connection, kept in close touch with what was going on, and lost no opportunity to protest against the proposals as occasion required. Latterly it was not necessary for the association to move in the matter, as it was relying upon no progress whatever being made without the assent of the Canadian Government and the International Joint Commission.

Our attention has been called to the fact that the Dominion Conservation Commission also took a very active part in opposing the project from the commission's inception in January, 1910. In 1913 the commission published a report of nearly 400 pages, including all available data respecting the company and its project, and subsequently assisted the State of New York at every stage of its fight with the company. When the case was heard by the U. S. Supreme Court in April, 1916, the Conservation Commission had a shorthand reporter present and procured a stenographic report. When the court ordered a rehearing, the commission had the only record of the arguments and furnished the State of New York with a copy. The order for a rehearing was totally unexpected, and the State of New York would have been much inconvenienced had a report of arguments by counsel been unavailable.

Lake and Rail Rates Over Canada Atlantic Transit Co's Line.

The Interstate Commerce Commission gave the following decision at Washington, Dec. 11:

At the close of navigation on the Great Lakes for the season of 1915 the operation of the lake and rail rates on cotton and cotton linters, named in a tariff of the Chicago, Rock Island & Pacific Ry. Co., and therein made applicable in connection with all the lake lines, was superseded, for the closed season, by a supplement in due form properly filed. On Mar. 17, 1916, another supplement to the same tariff was filed to take effect on three days notice under the authority of rule 12 (b) of Tariff Circular 18-A relating to the restoration of rail and water rates so temporarily withdrawn. While on its face this supplement cancelled the previous one of Nov. 30, 1915, specific provision was made for the restoration of the rates only in connection with the Lehigh Valley Transportation Co. It did not purport to cancel the rates theretofore applicable over the other lake lines named in the tariff; and under the commission's rules the cancellation of the other routes could legally be effected only upon 30 days notice. Although the railway company subsequently was granted permission, on one day notice, to restore the rates theretofore applied in connection with the Canada Atlantic Transportation Co., that course was not followed, because of a disagrement between the two companies respecting divisions. Finally another supplement was filed, to become effective on May 15, 1916, in which the Rock Island Ry. sought to eliminate the transit company from participation in its tariffs. The effectiveness of this supplement, upon the protest of the latter company, was suspended under an order by this commission.

The respondent contends that the lake and rail rates, having been suspended in the fall of 1915 and not having been restored in the spring of 1916, the only result that could have been effected by the supplement of May 15 was the elimination of a tariff anomaly, the tariff itself naming the transit company as a party to the lake and rail rates while the two prior supplements thereto indicate that the rates do not apply in connection with that line. This is not a correct view of the effect of the tariff situation disclosed on the record before us. As the supplement of Mar. 17 did not make specific provision for the cancellation of the route in connection with the transit company, and could do so only upon 30 days notice, its effect was to restore the rates formerly applicable in connection with that route. It follows, therefore, that the supplement proposing to eliminate the Canada Atlantic Transit Co., if permitted to have become effective, would have cancelled the rates then in effect in connection with that line. As no reason has been offered of record for this course other than the failure of the railway company and the transit company to agree upon the divisions, we find that it has not been justified as required by law, and the respondent and its receiver will therefore be required to cancel the supplement in so far as it proposes to cancel the application of the respondent's lake and rail rates over the route in question.

The commission ordered that the Chicago, Rock Island and Pacific Ry. and its receiver be required to cancel said schedules, on or before Feb. 12, 1917, in so far as they propose the elimination of representation by the Canada Atlantic Co. in Chicago, Rock Island & Pacific Ry. tariff I.C.C. no. C-9896.

The Dominion Wreck Commissioner and His Critics.

The stranding of the British s.s. Middleham Castle on Matane Reef, Que., July 27, was a comparatively small affair, and the enquiry into the causes leading to it, held at Montreal, Aug. 3, by Capt. L. A. Demers. Dominion Wreck Commissioner, was not marked by anything noteworthy, either in the way of evidence or final judgment. It was held that the master, Capt. Kelly, had been guilty of reckless navigation in unknown waters, but owing to the general circumstances surrounding the case, he was merely reprimanded. Apparently the master was quite satisfied, and from reports was pleased that he had been dealt with so leniently. No sooner, however, had he returned to England, and apparently made complaint to the Mercantile Marine Service Association, than there was a perfect whirlwind of vituperation, either by the association or by the Liverpool Journal of Commerce on the association's behalf, directed at the Wreck Commissioner's report, his method of dealing with cases in general, and the St. Lawrence route and everything connected with it. For such a trivial case, as the one mentioned, the expenditure of printer's ink alone is an extravagance. While the case was being brought into so much prominence in the Liverpool paper, the association communicated with the Dominion Minister of Marine, and a reply was sent by the Deputy Minister, to which was attached a copy of a report on the case by the Wreck Commissioner, and at the same time a copy was sent to the Journal of Commerce, in answer to the criticism in the paper, as mentioned above. Following is a copy of the Wreck Commissioner's report to the Deputy Minister:—

"Referring to the criticism which has been made by the Journal of Commerce, and to the letter which has been written to the Minister of Marine, by the secretary of the Mercantile Marine Service Association, re Middleham Castle. I may say I do not think the criticisms are justified or based on facts. My condemnation of the action of the master of this vessel was to the effect that his sailing within three quarters of a mile of a coast absolutely unknown to him was a subject for censure; secondly, that provision or steps had not been taken at Syd-

ney to procure a proper chart of the St. Lawrence River. Even admitting the U.S. chart which he had to be a good and acknowledged chart, it was plainly marked on it that there is a buoy at the end of Matane wharf and a bell buoy outside. The weather was hazy, but the master said he could see some distance ahead, and if proper attention had been paid and a good lookout kept, which was necessary under the circumstances, he would have been able to distinguish between a bell buoy and an ordinary can buoy, which is placed at the end of the wharf for the guidance of local craft going in and out of that place. Notwithstanding the fact that he grounded his vessel there, and he saw some influences were driving her in towards the shore, he followed the same procedure after floating his ship, and passed inside of Cock Point buoy, a place where even our smallest coasting vessels do not like to navigate. In my judgment in this case I did not make any reference to the second occurrence, but had his ship come to grief inside of Cock Point buoy and the land I would have dealt with his certificate. It will all go to show that the navigation of this vessel was not carried on according to the proper rules, or with the necessary prudence which is required in the St. Lawrence. Further, the evidence of the mate of this vessel, who holds an extra master's certificate, shows that he stated that had he been master he would have sailed his vessel farther away from the land, and also that he noticed there was an influence drawing them in towards the shore. If anyone navigating a vessel cares to take the trouble to enquire and to read the sailing directions, he will find that there is a current running there which throws objects from the north shore to the south. In view of the above facts I think that the judgment, which was purely and simply a reprimand, cannot be considered as anything but lenient under the circumstances, and all the criticism which has been made as unfounded. It had been repeated to me that the master, Kelly, after receiving the reprimand, stated that he was agreeably surprised to have such a light penalty inflicted upon him. With respect to the charts, I may say I have only to refer to the report from the Transport Officer at Cydney, Capt. Pascoe, who states that no application for charts was made to him by Capt. Kelley, and that he has copies on hand which he has heretofore furnished to transports."

This letter was duly published in the paper mentioned, and the following day a letter was published in the same paper, from Thos. Scott, Secretary of the association, as follows:

"Your issue of yesterday contains a copy of a communication addressed to me by the Canadian Minister of Marine, in which Capt. Demers replies to certain criticisms directed by this association against his judgment on the stranding of the s.s. Middleham Castle. The statements of the Wreck Commissioner in his endeavor to sustain his severe censure of the master, had, last Tuesday afternoon, the very patient consideration of my council, who, at the same time, heard the reply of the master to the defence put forward by Capt. Demers. The meeting was quite satisfied, from the evidence before them, that in no way can Capt. Demers' language at the close of the enquiry be justified.

"In forwarding this correspondence to you for publication, this association feels that such a proceeding is not only premature, but indecorous. My council have a very full answer to each of the Wreck Commissioner's contentions, and it would have been more in keeping with the traditions of a Government department if Mr. Johnson had refrained from publicity until the case had arrived at an indisputable conclusion."

It is stated in this last letter that the council of the association was quite satisfied from the evidence before them, and the master's defence, that in no way can Capt. Demers' language at the close of the enquiry be justified.

Surely the proper place for the master to make his defence is at the enquiry itself, and with all due respect to the council of the association, we may say that we fail to see that the members are capable of forming any opinion on the merits of the case without actual personal knowledge of the scene of the casualty, which is possessed by the court which dealt with the case. The language used by Capt. Demers at the conclusion of the enquiry was, as he states, in the nature of a reprimand, and could in no way be classed as exceptionally severe, seeing the carelessness of navigation, as shown by the master's own evidence. The last paragraph of Mr. Scott's letter questioning the decorum of the Deputy Minister in sending the report to the press would, perhaps, have been written with better grace had the hands of the association been entirely clean in the matter. Would it not be correct to presume that the original criticism appearing in the Journal of Commerce, which caused the Deputy Minister to send the report to that paper for publication, was supplied from the association's office?

Canada Steamship Lines, Ltd., Finances.—A general meeting of holders of debenture stock and bonds of the company was called to be held at Montreal, Jan. 30, to consider and pass resolutions, to make an agreement with the Montreal Trust Co. with the object of securing the redemption of Richelieu & Ontario Navigation Co.'s outstanding bonds and the ultimate discharge of the mortgage securing same; and to amend the provisions of the trust deeds of Oct. 8, 1913, and Feb. 11, 1914, securing the 5% consolidated first mortgage debenture stock and bonds of C. S. L., Ltd., by providing that any stock or bonds purchased by the trustees may, in lieu of being kept alive, be surrendered on terms that the company shall not reissue any in place thereof, and that the stock or bonds so surrendered shall continue to be taken into computation for limiting the amount which the company is entitled to issue.

St. John, N.B., Harbor Improvements Discontinued.—Work on the harbor improvements at St. John, N.B., covered by contracts awarded to the Norton Griffiths Construction Co., has been discontinued, and no decision has been arrived at in regard to its continuation. These contracts covered the construction of 4,600 ft. of breakwater, which is practicaly completed; 9,900 lineal ft. of quay walls, on which no work has been done; a dreadnought dry dock, 1,000 ft. long, the excavation for which has been made, and the reclamation of large tracts of land. A considerable portion of the dredging work has been done in the harbor basin and channel. It is stated that the labor problem is one of the contributing causes of the abandonment of the contract. Col. Norton Griffiths, M.P., of England, who is chiefly concerned, has given up all contracting work of this nature, and is devoting himself entirely to work connected with the war.

Steamship Construction at Port Arthur.

The Port Arthur Shipbuilding Co. has received orders for 6 additional salt water steamships of the Norwegian type, similar to the steamships Blaamyra and Thorjerd, turned out from the company's yards recently. They will be of the following dimensions: Length over all, 261 ft.; length between perpendiculars, 251 ft.; breadth moulded, 43 ft.; depth moulded, 28 ft. 2 in.; carrying capacity, about 3,000 gross tons.

They will be of the single deck type, with poop, bridge and forecastle, steel deckhouse on bridge deck and chart room on top of deckhouse, with navigating bridge. They are being built on the transverse system of construction with two cargo holds and two hatches in each hold. No. 1 hold will extend from collision bulkhead to boiler room bulkhead, and no. 2 hold from engine room bulkhead to after peak bulkhead. The propelling machinery will be located amidships. The double bottom will be 3 ft. deep, extending from collision bulkhead to after peak bulkhead, divided by transverse water or oil tight floors into a number of compartments. Part of the double bottom will be utilized for fuel oil, the remainder of the fuel to be carried in wing tanks, which can also be used for coal. The officers and crew will be berthed amidships on bridge deck, where also will be the mess rooms, galley, pantry, lavatories, etc. The firemen and sailors will have their quarters aft on main deck.

The two main boilers will be of the Scotch marine type, single ended, and arranged abreast. They will be 14 ft. 8 in. diam. by 11 ft. long and will have a combined grate area of 126 sq. ft. Each boiler will have 3 corrguated furnaces, of the suspension type, 42 in. inside diam., and will be fitted for natural draught.

The propelling machinery will consist of triple expansion engine with surface condensers, built-in type, 3 cylinders each, working each on a separate crank placed at an angle of 120 degrees. The slide motion will be of the Stephenson link type. Cylinders 20, 33 and 54 in., with a stroke of 40 in. The average working horse power will be 1,200, maximum 1,300. The high pressure cylinder will have piston valve, the low and intermediate will have double ported slide valves with relief frames, and the low pressure one will have a Lovekin assistant cylinder. The high pressure cylinder will be supplied with a loose bushing of hard cast iron. All cylinders will have relief valves, top and bottom, discharging into the atmosphere. The turning gear will consist of a single cylinder engine, driving through worm gearing, a shaft mounted on sliding cast steel worm. The propeller will be of cast iron, solid section, with four blades. The air pump will be bolted to the back column of the engine.

The steam steering gear will be placed on the main deck in the engine room. There will also be a hand steering gear aft, and 8 x 6 in. steam windlass fitted with hand attachment and friction brakes. All anchors will be of the stockless type, of size in accordance with Lloyd's requirements. To facilitate the handling of the cargo there will be six 7 x 12 in. reversible steam winches, and 6 derrick booms to lift 4 tons each.

The vessels will be fitted throughout with electric light. One 7½ k.w. generator will be fitted in engine room. All wires, with the exception of those in cabins, will be enclosed in conduit, with outlets terminating in watertight fixtures.

Valetta-Sol Bakken Collision.

Following is a summary of the judgment by Capt. L. A. Demers, Dominion Wreck Commissioner, concurred in by Commander E. Wyatt, R.N.R., and Capt. R. Jones, as nautical assessors, re the collision of the steamships Valetta and Sol Bakken, near Cape Dogs, in the River St. Lawrence, Oct. 4, 1916,—The court finds that both vessels were to blame, each having violated articles 21, 27 and 29. The evidence was very contradictory, and the court came to this decision on the fact that neither vessel, when collision was imminent, took the action provided for in the articles mentioned. The chief officer of the Sol Bakken was remiss in his duty in not complying with the rules of the road, but as he is a foreigner he cannot be dealt with. The master of the Sol Bakken is exonerated from blame. The pilot, Arthur Paquet, committed a grave breach of discipline in leaving his post, and owing to the fact that he has been, and is now, serving as an officer in the Canadian Army, his license will not be dealt with, but he is fined the maximum amount of $400, and is to defray the expenses of his travels to Halifax and return to his home.

The master of the Valetta is exonerated from blame. The second officer, D. Gillies, for leaving the bridge at a crucial moment and failing to comply with article 21 (note), is severely criticized and reprimanded. Owing to the conditions existing, and the presence of a pilot near him, his certificate will not be dealt with. The pilot, Ernest Bernier, knowing that his vessel was sheering, is found at fault for the casualty, and is fined $300, and is to defray his own expenses.

Collingwood Shipbuilding Co., Ltd.—Some details of the change of ownership of this company were given in our last issue, when it was stated that a new company would be incorporated. This has now been done, the Collingwood Shipbuilding Co., Ltd., having been incorporated under the Dominion Companies Act, with capital stock of $2,600,000, and office at Collingwood, Ont. It is authorized to build, sell, own, charter and operate steam and other vessels, wrecking outfits, wharves, docks, piers, dry docks, telegraph and telephone lines on its own lands, wireless telegraph outfits for its own use, steamship and railway terminals and other transportation and storage facilities; to carry into effect an agreement between H. B. Smith, J. W. Norcross and R. M. Wolvin, named the vendors, and W. S. Morlock as trustee, whereby the vendors, as promoters of the company agree to sell the undertaking known as Collingwood Shipbuilding Co., Ltd., incorporated under the Ontario Companies Act, by which they will make a profit in shares of the company.

The Lake Carriers' Association's annual meeting was held at Detroit, Mich., Jan. 18. The report states that 73 lives and 14 vessels were lost last year on the Great Lakes. The ore movements were 64,734,198 tons, against 49,070,478 for 1913, the previous highest year. The grain shipments for the year were 363,999,156 bush., a decrease of 22,166,896 bush. from 1915. The average rate per bush. during 1916 was 4¼c, compared with 2¼c for the year previous. Seventy-one vessels were sold, totalling 683,770 tons, and 59 vessels were reported as under construction for delivery during the current year. W. Livingstone was re-elected President and Chairman of the Executive Committee.

Atlantic and Pacific Ocean Marine.

The name of the s.s. Prospective, owned by the Dominion Public Works Department, and registered at Vancouver, B.C., has been changed to Point Hope.

The Cunard Steamship Co. is reported to have two steamships under construction in Great Britain, for service on the Pacific Ocean between Vancouver and the Orient.

Manchester Liners' s.s. Manchester Inventor, which left St. John, N.B., early in January, has been sunk by an enemy submarine. She was of 4,247 tons, and has been operated for some time between Manchester, Eng., and Montreal and St. John.

The Newfoundland schooner Harry Adams, from St. John's to the Mediterranean with fish, is reported to have been torpedoed by the enemy in the Bay of Biscay. The crew were placed in an open boat, and eventually landed at Ferrol, Spain.

The France & Canada Steamship Co. is reported to have chartered the s.s. Newton from the New England Coal & Coke Co., Boston, Mass., at approximately $100,000 monthly. She will be operated on the company's route between North America and St. Nazaire, France.

The Osaka Shosen Kaisha, operating between Japan and Puget Sound ports and San Francisco, has announced that in future Victoria, B.C., will be the only Canadian port of call, instead of Victoria and Vancouver as hitherto. If sufficient inducement offers, and time permits, occasional calls may be made at Vancouver.

The International Mercantile Marine Co.'s earnings for December are reported as nearly $5,000,000, or about $500,000 more than the best previous estimate. The trend is still upward, and it is expected that later months may exceed the record monthly earnings of $6,700,000 in 1916.

The France-Canada Steamship Co.'s s.s. Arrino, which left this side recently with cargo for St. Nazaire, France, is reported to have rammed a German submarine while it was engaged in laying mines outsid of St. Nazaire harbor. The submarine was disabled in the ramming, and was subsequently destroyed by a French patrol boat.

The Portuguese s.s. Tras Os Montes has been chartered for Canada Steamship Lines' service between New York and Bermuda, and was placed in service on that route toward the end of January. She is the largest vessel ever run on these trips, and has four large observation decks, parlor rooms and all other up to date accommodation. Her dimensions are, length 462 ft., beam 57.6 ft., depth 36 ft.

The yacht Florence, owned by Sir John C. Eaton, Toronto, and latterly operated as a patrol and scout vessel by the Dominion Naval Service Department, is reported sold to the French Trading Co. of Martinique, for commercial purposes. She was built at Elizabeth, N.J., in 1903, and is screw driven by engine of 65 n.h.p. Her dimensions are, length 144 ft., breadth 22.6 ft., depth 9.6 ft.; tonnage, 237 gross, 123 register.

The Hamburg-American Line, which is to a large extent controlled by the German Government, announced, toward the end of December, that it was open to make arrangements for shipping freight from the U. S. to Hamburg, upon the resumption of peace, or such earlier time as the obstacles to a resumption of traffic may be removed. The announcement is a little previous, as there appears to be no possibility of an immediate peace, and the obstacles to a general resumption of German shipping are still in existence.

The s.s. Thorjerd, which recently left Port Arthur, where she was built, for New York, to take up coasting service, arrived at her restination early in January, in a battered condition, due to heavy storms, after passing from the Gulf of St. Lawrence. She ran out of fuel, and it is stated that on her arrival the pilot house was the only woodwork left in her construction, everything else having been used for fuel. She eventually had to be towed into port.

A number of British and allied steamships, trading across the Atlantic Ocean, are reported to have been sunk or taken to neutral ports as prizes, by a German raider, or raiders, running loose in the Southern Atlantic. Details are naturally lacking, but amongst those mentioned, the most intimately concerned with Canada is the C.P.R. s.s. Mount Temple. She was built at Newcastle upon Tyne, Eng., in 1901, of steel, with twin screws, triple expansion engines, electric light, submarine signalling and wireless telegraph equipments, etc. Her dimension were, length 485 ft., breadth 59 ft., depth 30.4 ft.; registered tonnage, 8,790.

Regarding the reports about the Cunard Steamship Co.'s possible arrangements for the extension of its services on the Atlantic and Pacific Oceans, the following paragraph is taken from the Canadian Northern Ry. report for the year ended June 30, 1916: An agreement of great importance in the development of the system's freight and passenger traffic was made during the year with the Cunard Steamship Co. Under its terms the Cunard Co. has taken over the Atlantic steamships controlled by the C.N.R. and a close working alliance is in effect between the two companies, the various Canadian services of the Cunard Line and the C.N.R. having become, in effect, a single transportation unit between Europe and Canada. Steamship services on the Pacific Ocean are also in contemplation."

Port Maitland Harbor.—The Public Works Department has dredged a channel 328 ft. wide, from deep water in Lake Erie to the entrance between the breakwater piers at Port Maitland, the west edge of the channel being in line with the west breakwater pier. From the inner entrance to the piers, a 300 ft. channel has also been dredged upstream to the car ferry slip, opposite which a turning basin has been dredged 650 ft. wide. From this point the existing channel of Grand River has been deepened and widened, near the east shore, to an average width of 100 ft., for 2,200 ft. All the dredging has been done to a depth of 21 ft. below the datum line, or deeper, the datum line being 571.8 ft. above mean sea level.

Lake and Rail Rates Cancellation Forbidden.—The Interstate Commerce Commission has decided at Washington, D.C., that the proposed cancellation of joint rail, lake and rail class and commodity rates from points in the east to points south and west of the Great Lakes, now maintained by various railways, in connection with two steamship lines operating on the lakes, the Cleveland & Buffalo Transit Co. and the Detroit & Cleveland Navigation Co., is not justified.

Maritime Provinces and Newfoundland.

Pickford & Black, Halifax, N.S., are reported to have chartered the Norwegian s.s. Amanda for service between Halifax and Jamaica.

The harbor of St. John's, Nfld., is again open to navigation, and the lights in St. John's harbor, at Cape St. Francis, Cape Spear, Bay Bulls, Ferryland Head and Fort Amherst, are re-exhibited.

Vessels larger than fishing boats are warned against attempting to enter Little Glace Bay harbor, on the east coast of Cape Breton, N.S., on account of the depth of the channel having been reduced to 5 or 6 ft., owing to ballast having been washed from the piers at the entrance during a recent storm.

The Eastern Steamship Corporation's property has been sold under foreclosure proceedings, for $3,366,000. the purchaser assuming all liabilities. The properties covered by the transaction include wharves and warehouses at St. John, N.B., and in Maine, Massachusetts and New York, and a number of steamships. An interest in the Boston & Yarmouth Steamship Co., consisting of 6,700 shares, valued at $335,000, was also included in the sale. A steamship service was operated between St. John and Boston by the steamships Calvin Austin, Governor Cobb, Governor Dingley and North Star.

Province of Quebec Marine.

The Quebec Board of Trade is conducting a campaign among British shipbuilders, pointing out the advantages as a location for shipbuilding plants.

During 1916, between April 24 and Dec. 15, 3,265,022 tons of cargo passed through the Lachine Canal, against 3,265,294 for the previous year. The canal was open for business 236 days in each year, and the cargo tonnage is practically the same in each case.

The Assistant Deputy Minister of Marine advised the Quebec Board of Trade recently that the North Channel, below Quebec, which had been dredged to a greater depth that 25 ft. at low tide would not be open for navigation for ocean steamships next season, as there are a great many points sticking up which will have to be cleaned up. An elevator dredge is under construction, and when this is ready for service about the middle of the season, it will be placed at work dredging to a minimum depth of 35 ft. at low tide, which the Department desires to have before opening the channel to navigation.

The Shipmasters' Association, at its annual meeting at Vancouver, B.C., Jan. 5, discussed the question of "double-headed" certificates held by some masters. This has been up for discussion on several occasions, but the association has taken no definite action. The members claim that it is unfair that U. S. shipmasters, in addition to having U. S. papers, can obtain Canadian papers by showing that they have sailed during three years in Canadian waters, while the U. S. authorities do not extend similar privilege to Canadian shipmasters. The discussion was adjourned to a future meeting.

The name of the s.s. Cora, which has been purchased in the U. S., and placed on the Canadian register, has been changed to Thomas B.

Ontario and the Great Lakes.

The Governor General in Council has approved amended regulations for the ferry across the Niagara River between Fort Erie, Ont., and Buffalo, N.Y.

The Toronto Harbor Commission reported to the city council recently, that up to the end of Nov. 1916, $1,014,411 had been spent on harbor improvements, $119,828 being spent in November. The total appropriation to that date was $2,693,896.

The Collingwood Shipbuilding Co., Ltd., Collingwood, Ont., has the following repair work on hand: s.s. J. A. McKee, side damage; s.s. Alberta, machinery overhauling; s.s. Glen Lyon, bottom damage; s.s. Iroquois, bottom damage; s.s. Imperial, collision damage.

The ferry steamboat Bigelow, operating between Brockville, Ont., and Morristown, N.Y., crossed the St. Lawrence between these points Jan. 10, the river being free from ice. On Jan. 11 the river was frozen over and pedestrians were able to cross without difficulty.

The Grain Growers' Export Co. failed in its action at Toronto, Jan. 24, against Canada Steamship Lines, Ltd., to recover $18,376.75 for the destruction of 10,501 bush. of wheat, which was loaded into a vessel which it was alleged was not tight, staunch and strong or fit to carry such cargo.

The U. S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level for December as follows: Superior, 603.16; Michigan and Huron, 580.56; Erie, 571.56; Ontario, 245.37. As compared with the average December levels for the past 10 years, Superior was 0.94 ft. above; Michigan and Huron, 0.55 ft. above; Erie, 0.11 ft. above, and Ontario, 0.02 ft. below.

Canada Steamship Lines, Ltd., has purchased the machinery of the s.s. Fred Pabst from the Reid Wrecking Co., Sarnia. The machinery is to be removed and installed in a new wooden hull which the company will build at its shipyards at Sorel, Que. The vessel was built in 1890, and has dimensions, 287 ft. keel by 42 ft. beam, 2,430 tons gross, 1,929 tons register. She is equipped with triple expansion engines with cylinders 21, 33½ and 57 in. diam. by 42 in. stroke, supplied with steam by 2 Scotch boilers 13 by 10½ ft.

The United States Circuit Court of Appeals on Jan. 2 affirmed the ruling of the lower court which issued an injunction restraining the Great Lakes and St. Law-

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during December, 1916.

ARTICLES			CANADIAN CANAL	U. S. CANAL	TOTAL
Copper	Eastbound	Short tons	3,882	122,161	126,043
Grain		Bushels	46,086,508	47,093,808	93,180,316
Building stone		Short tons			
Flour		Barrels	3,339,331	6,887,129	10,226,460
Iron ore		Short tons	11,487,371	51,935,809	63,423,180
Pig iron				35,032	35,032
Lumber		M. ft. b.m.	13,689	327,663	341,352
Wheat		Bushels	86,825,438	139,237,877	226,063,315
General merchandise		Short tons	57,443	281,470	338,913
Passengers		Number	16,055	12,064	28,119
Coal, hard	Westbound	Short tons	87,710	2,122,509	2,210,219
Coal, soft			942,827	12,970,073	13,912,900
Flour		Barrels	12,960	421	13,381
Grain		Bushels		9,245	9,245
Manufactured iron		Short tons	23,071	144,091	167,162
Iron ore		Short tons	14,448	14,479	28,927
Salt		Barrels	66,787	663,053	729,840
General merchandise		Short tons	350,753	959,354	1,310,107
Passengers		Number	15,560	11,243	26,803
SUMMARY					
Vessel passages		Number	6,691	18,716	25,407
Registered tonnage		Net	12,786,256	57,038,207	69,824,463
Freight—Eastbound		Short tons	15,373,354	58,775,064	74,148,418
—Westbound			1,429,646	16,310,155	17,739,801
Total freight			16,803,000	75,085,219	91,888,219

COMPARATIVE STATEMENT FOR THE SEASONS 1915 and 1916.

ITEMS			SEASON 1915	SEASON 1916
Vessels:	Steamers	Number	17,999	21,606
	Sailing	"	1,884	2,461
	Unregistered	"	1,650	1,340
	Total	"	21,233	25,407
Lockages		Number	13,808	16,190
Tonnage:	Registered	Net	56,399,147	69,824,493
	Freight	Short	71,290,304	91,888,219
Passengers		Number	50,336	54,922
Coal:	Hard	Short tons	2,030,730	2,210,219
	Soft	"	11,326,328	13,912,900
Flour		Barrels	8,436,937	10,239,841
Wheat		Bushels	255,481,558	226,063,315
Grain		"	54,786,870	93,189,561
Manufactured and Pig Iron		Short tons	211,781	202,194
Salt		Barrels	699,337	729,840
Copper		Short tons	156,436	126,043
Iron Ore		"	45,213,604	63,452,107
Lumber		M. ft. B.M.	456,451	341,352
Building Stone		Short tons		
General Merchandise		"	1,595,398	1,649,020

The Canadian canal was opened April 18 and closed Dec. 18, 1916; season 245 days.
The U.S. canal was opened April 20 and closed Dec. 19, 1916, season 244 days.

rence Transportation Co. from selling of its steamships, claimed by the Scranton Coal Co. as being used by it for coal transportation. The situation is rather an interesting one, as the vessels were sold some time ago, delivery has been made, and one of them, at least, has been sunk by the enemy. When the injunction was granted, the vessels were at Montreal, and had been sold to French parties.

British Columbia and Pacific Coast.

The Harbor Shipping Co. is reported to have chartered the sealing steamship Eva Marie for general freight in the Gulf of Georgia and Puget Sound.

The Governor General in Council has approved the Vancouver Harbor Commission's bylaw 114, providing that the salary of the Superintendent of the Government wharf at Salisbury Drive be $150 a month, from Dec. 1, 1916.

It is reported that the C.P.R. will withdraw its s.s. Otter from the Gulf Islands run, Feb. 1, and that the Dominion Government has been notified that the company will not seek a renewal of the mail contract. It is claimed that the service is not remunerative.

The ferry boat Langley Fort has discontinued calling at Langley on its way to New Westminster, owing to the dredging required to be done there. It is stated that much of the traffic which usually went by the ferry is now being taken by the Canadian Northern Ry.

The Dominion Government wharf at Vancouver was opened for business, Jan. 1. The main structure has been finished for some time, but the buildings and railway tracks were only completed during December. The approximate cost of the wharf and buildings is $2,500,000.

The Alaska Steamship Co.'s s.s. Stanley Dollar, which ran aground at Galiano Island, near Helen Point, Jan. 12, was released by the C.P.R. steam tug Nitinat on the following day. The Stanley Dollar was bought recently by the Alaska Steamship Co. from the Robert Dollar Steamship Co.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Rupert was dry docked at Esquimalt during January for some bottom repairs, after touching ground when on the northern route some months ago. Machinery repairs were also undertaken, and she was generally overhauled and painted.

The Imperial Oil Co.'s s.s. Imperoyal was docked at North Vancouver during January for general overhaul and repairs. She was, until recently in service on the Great Lakes, and some time ago went to Mexico, passed through the Panama Canal, ran down the coast to Peru and later went to Prince Rupert.

The Ship Esquimalt Co., Ltd., has been incorporated under the British Columbia Companies Act, with $200,000 capital, and office at Vancouver, to enter into an agreement with Cameron-Genoa Shipbuilders, Ltd., for the construction by the latter, and purchase by the former, of the schooner Esquimalt, now on the stocks at Victoria, and to carry on a general trading and commission business.

It was expected in Vancouver that the Dominion Government would, during January, award contracts in British Columbia for the construction of two wooden vessels with auxiliary motive power, similar in type to those now under construction in the Province for the Canada West Navigation Co., of which some details have already been published. It is intended that these vessels will be used on a route between the Canadian coasts on the Pacific and Atlantic Oceans, via the Panama Canal.

Marine Engineers Wage Scale on Great Lakes.

The National Association of Marine Engineers of Canada has issued a card to steamship owners giving the following minimum wage scale and classifications for steamships operating on the Great Lakes District, which was adopted by the Association's Great Lakes Executive Committee at the annual meeting in Toronto, on Janu. 4, representing Port Arthur, Sault Ste. Marie, Collingwood, Owen Sound, Midland, Toronto and Kingston councils, and approved by the National Executive Committee. The contents are as follows:

"This card to be effective during the season of 1917, or until revised or amended by the Lake Executive Committee. This classification and schedule does not apply to certain ferry steamers, where special arrangements may be necessary, or to superintending engineers. All reference to tonnage to be construed as gross tons. In reference to employment, transportation, board, etc., 1916 conditions to prevail.

Passenger Steamers.

Class 1. All passenger steamers of 3,500 tons or over: chief engineer, $1,800 per season; second engineer, $125 a month.

Class 2. All passenger steamers of 1,250 tons and under 3,500 tons: chief engineer, $1,600 per season; second engineer, $110 a month.

Class 3. All lake passenger steamers under 1,250 tons and all passenger steamers confined to river, service requiring second class engineer: chief engineer, $1,400 per season; second engineer, $90 a month.

Class 4. All passenger steamers from 45 n.h.p. to 25 n.h.p.; chief engineer, $120 a month; second engineer, $80 a month.

Class 5. All passenger steamers under 25 n.h.p.; chief engineer, $100 a month.

Freight Steamers.

Class 1. All freight steamers, 6,000 tons and over: chief engineer, $1,800 per season; second engineer, $125 a month.

Class 2. All freight steamers of 3,000 tons and under 6,000 tons: chief engineer, $1,600 per season; second engineer, $110 a month.

Class 3. All water bottom freight steamers under 3,000 tons, requiring second class engineer: chief engineer, $1,400 per season; second engineer, $100 a month.

Class 4. All freight steamers not included in classes 1, 2 and 3, and requiring second class engineers: chief engineer, $135 a month; second engineer, $90 a month.

Class 5. All freight steamers, 250 tons and over, and requiring third class engineers; chief engineer, $110 a month; second engineer, $90 a month.

Tug Steamers.

Class 1. All tug steamers requiring second class engineers: chief engineer $135 a month; second engineer, $100 a month.

Class 2. All tug steamers from 75 n.h.p to 30 n.h.p.: chief engineer, $125 a month; second engineer, $95 a month.

Class 3. All tug steamers under 30 n.h.p., requiring licensed engineers: chief engineer, $110 a month; second engineer, $85 a month.

Shallow Draught Vessel Building in British Columbia.

It was announced in our last issue that Yarrows Ltd., Victoria, B.C., had received an order for a stern wheel, shallow draught steamboat, similar to one supplied by them recently for Indian waters. This type of vessel is in great demand for operation in countries where there are shallow rivers and swampy regions where it is difficult to navigate.

The hull is of light weight steel, with steel main deck and holds for cargo. The upper deck, which is of wood, is for the cabins and passenger accommodation, with dining room and other conveniences, and above this is a galvanized roofiing to protect the cabins, etc. The aim is to have strength combined with lightness, so as to obtain the least possible draught when afloat. The hull is strengthened by 6 king posts of H section steel, 3 on each side of the vessel, braced together with diagonal trussing of 3 in. double angle steel bars, also a longitudinal bulkhead in the centre of the vessel, running from forward to aft, with deck stringers under the main deck. There are 8 transverse bulkheads, making the hull into water tight compartments, so that in the event o fone compartment being punctured, the remaining ones will keep the vessel afloat. The vessel draws 18 ins., and when loaded with 100 tons, approximately 36 ins. In building the vessel, the system adopted is that the plates, angles, machinery, etc., aer made of such weight as may conveniently be handled and packed in cases or crates, so that the different parts may be transported easily to places difficult of access, and assembled where required, each piece being marked to its place. The riveting is all done cold.

The Esquimalt Graving Dock Committee, an organization, with J. W. Phillips as Secretary, formed to promote the establishment of a dry dock at Esquimalt, is petitioning the Dominion Government and urging that the proposed dock be commenced and completed with all possible speed. It is pointed out that when British Columbia entered the Dominion, the latter government undertook to use its influence to secure the continued maintenance of a naval station at Esquimalt, and it was also provided that the Dominion Government guarantee interest for 10 years from the completion of certain works, at the rate of 5% per anum, on an amount not exceeding £100,000, as might be required for the construction of a first class dock. The present dry dock, which was completed about 1881, is no longer capable of handling the modern steamships, and the vessels which would otherwise have been repaired at Esquimalt, have had to go to the U. S. The Dominion Government, in 1914, selected Lang's Cove as the site for an up to date dry dock, and considerable adjacent property was purchased for erecting workshops, but since then, nothing has been done in the matter.

Port Arthur Shipbuilding Co., Ltd., has been incorporated under the Ontario Companies Act, with $2,500,000 capital and head office at Port Arthur, to carry out an agreement with the Western Dry Dock and Shipbuilding Co., Ltd., whereby the latter agrees to sell to the former, its undertaking, plant, etc. The company is empowered to carry on a general shipbuilding business, and to own and operate steam and other vessels, and to own shares in any other business similar to its own.

Mainly About Marine People.

D. J. McKinnon, Sydney, N.S., has been appointed harbor master of the port, vice A. McQuarrie, resigned.

W. G. Ross, Chairman, Montreal Harbor Commissioners, has been appointed Director of Naval Recruiting for Quebec Province.

Sir Montagu Allan, formerly of the Allan Line Steamship Co., Montreal, has taken a house in Park Lane, London, Eng., for the winter.

Capt. E. Kinney has resigned as master of the Boston and Yarmouth Steamship Co.'s s.s. Prince George, on receiving an appointment under the Dominion Government on the Pacific Coast.

Capt. A. Simms, heretofore master of the Eastern Steamship Corporation's s.s. Boston, has been appointed master of the Boston and Yarmouth Steamship Co.'s s.s. Prince George, vice Capt. E. Kinney resigned.

Alexander Cox, master of the Canadian Northern Ry. barge no. 1, operating between Port Mann and Vancouver Island, was drowned at Port Mann, Jan. 1. It is supposed that he missed his footing when returning to his vessel in the dark.

H. W. Richardson, who has been appointed to the Senate, is head of the firm of James Richardson & Sons, grain dealers, Kingston, and is Vice President, Great Lakes Transportation Co., Midland, Ont., and one of the Dominion Government directors of the Canadian Northern Ry.

Capt. J. E. McDonald, formerly in the Dominion Government service as mate of the s.s. Quadra, and **Capt. Dickson**, master of the Union Steamship Co.'s s.s. Camosun, have joined an inland water transport unit, recruited in British Columbia, and were expected to leave Canada during January, for Mesopotamia.

Capt. William Babb, who died at Goderich, Ont., aged 77, commenced his seafaring career as a midshipman in the Royal Navy, and after obtaining his papers as a first class gunner, put in several years in service round the British coast and in the Mediterranean Sea, on H.M.S. Marlborough, under Lieut. Fisher, now Rear Admiral Fisher, R.N. He came to Canada in 1860 on the H.M.S. Cherub and was engaged in patrolling the Detroit River guarding against Fenian raiders, and went with that vessel on patrolling service in the West Indies, and transferred to the H.M.S. Revenge in 1870. He settled in Goderich in 1870, and served on the s.s. Prince Albert during the Fenian raid of that year as gun instructor.

Herbert Newbold McMaster, who has been appointed Marine Superintendent, Montreal Transportation Co., Kingston, Ont., was born at Deseronto, Ont., Aug. 6, 1876, and commenced his navigation career in the spring of 1890, since when he served in various capacities, to the autumn of 1897, on Frank McMaster's fore and aft schooners, Picton, and Annandale, and on the Standard Oil Co.'s s.s. Vanallen; 1898, mate, s.s. Resolute, Deseronto Navigation Co.; 1900 and 1901, mate, s.s. Advance, Mathews Steamship Co.; 1902 and 1903, mate, Frank McMaster's schooner, Emerald; 1903, mate, s.s. Fairmount, Montreal Transportation Co.; 1904, mate, s.s. Iroquois, St. Lawrence and Chicago Steam Navigation Co.; 1905 and 1906, master, s.s. Golspie, R. O. & A. B. Mackay; 1906, master, s.s. Edmonton, Mathews Steamship Co.; 1907 to 1912, master, various steamships, Montreal Transportation Co.; Jan. 1, 1913 to Dec. 31, 1916, Assistant Marine Superintendent, Montreal Transportation Co., Kingston, Ont., and for the last two years at New York, superintending the movement and repair of the company's vessels engaged in Atlantic service, calling at ports between Halifax, Newport News and the West Indies. In the early stage of his career he was a ship's carpenter, and during the winter was engaged at the Deseronto shipyards.

J. C. Gore, Superintendent, British Columbia Lake & River Service, C.P.R., died suddenly at Nelson, Jan. 18. He had been laid up for a few days with grippe, but had been at his office on the day of his death. He was seized with an attack of coughing, and died from heart failure. He went to British Columbia from the Williamette River in 1891, and was appointed captain for the Columbia & Kootenay Steam Navigation Co., then operating steamboats on the Okanagan, Arrow, Kootenay and Slocan Lakes, and was master of the steamboat Nakusp. When the C.P.R. acquired that company in 1896 he entered C.P.R. service, and in 1901, when the C.P.R. acquired the Canadian Pacific Navigation Co., he was appointed as Superintendent of the Lake and River Service.

The Outlook for Lake Shipping.—The Canadian Bank of Commerce monthly commercial letter for January says: "There is little doubt that there will be for some years to come abundant employment for a larger tonnage on the Great Lakes than is at present in service. British registered steel tonnage on the lakes is now 218,019 tons, compared with 286,121 tons at the close of the 1915 season. The tonnage of new vessels added to the lake service during 1916 was 12,218 tons, and that of vessels purchased from the U.S. and added to British registry was 15,349 tons. The decline is due to the transfer to ocean service of 50 vessels, aggregating 95,669 tons. This decline in tonnage is serious in view of the expanding volume of lake traffic, and under the circumstances it is reasonable to assume that Canadian shipbuilders have before them a period of unusual activity. A large proportion of the total lake freight traffic consists of iron ore and the carriage charges per ton at present are $1.25 compared with the normal rate of 50c, a marked indication of the general increase in the cost of transportation."

Vessels Turning in the River at Fort William.—About the middle of 1916 an order in council was passed requiring all vessels desiring to turn when in the river at Fort William, to go into one of the turning basins for the purpose. The Dominion Marine Association, at the time, protested against the order, on the ground that it would work unnecessary hardship on canal sized vessels, without corresponding advantage. The Marine Department took the matter under consideration, but decided that for the time being, the regulation would have to stand. The association has further considered the matter, and it has been decided to ask for the exemption of canal size vessels, in two sections of the Kaministikwia River, subject to such proper supervision as the department may require. It was also decided to point out that turning basins should be above, rather than below bridges, where possible, particularly where a long stretch of frequented water is below the bridge, and vessels are required to pass the bridge to make a turn. The practice of mooring or laying up vessels along the shores of the turning basins is also being protested against.

Chicago Drainage Canal and Great Lakes Levels.—The Dominion Marine Association has again had under consideration the withdrawal of water from the Great Lakes, for use through the Chicago Drainage Canal, and has decided to bring the matter before the Shipping Federation of Canada and the Lake Carriers' Association, with a view to joint action, either by way of appeal to the respective governments or by joint application to the International Joint Waterways Commission.

Grain Shortages and Overages in Cargoes.—The Dominion Marine Association had under discussion recently the regulations regarding the outruns of grain cargoes and the adjustment or shortages and averages, and an interim report on the subject by a special committee appointed by the Grain Commission to consider a scheme for adjustment which would be satisfactory to all parties.

Load Line Restrictions on Vessels to Australia.—The Dominion Government is negotiating with the Australian Government for a modification of the load line restrictions imposed on Canadian vessels trading with Australia. The matter is being handled by the Marine Department, and it is expected that the discrimination which exists under the present regulations will be done away with.

British Shipbuilding.—It is announced from London, Eng., that the Government has issued instructions to several shipyards where high class passenger vessels are under construction, that such work must cease and the labor be diverted to the construction of plain cargo vessels.

Shipments of Grain from Fort William and Port Arthur.

Following are comparative statistics, supplied by the Board of Grain Commissioners, showing the total bushels of each kind of grain shipped from Fort William and Port Arthur in Canadian and United States vessels during 1913, 1914, 1915 and 1916:

	Wheat.	Oats.	Barley.	Flax.	Totals.
1916—					
895 Canadian vessels	97,288,766	44,015,292	6,235,464	1,715,590	149,255,112
565 United States vessels	84,397,225	13,805,947	2,651,818	3,859,396	104,714,386
1,460 cargoes	181,685,991	57,821,239	8,887,283	5,574,987	253,969,498
1915—					
687 Canadian vessels	68,537,524	23,057,013	2,718,499	967,830	95,280,866
452 United States vessels	98,827,699	4,174,796	2,074,004	1,436,547	106,513,046
1,139 cargoes	167,365,223	27,231,810	4,792,504	2,404,378	201,792,912
1914—					
751 Canadian vessels	64,881,194	22,473,825	4,026,586	1,793,747	93,175,352
138 United States vessels	22,886,876	3,490,095	1,069,595	5,777,907	33,224,473
889 cargoes	87,768,070	25,963,920	5,096,182	7,571,655	126,399,825
1913—					
Canadian vessels	63,556,912	26,936,057	6,755,942	9,385,685	106,634,596
United States vessels	68,241,075	13,844,653	4,840,076	9,680,376	96,606,180
Totals	131,797,987	40,780,711	11,596,019	19,066,061	203,240,776

Regulations Respecting to Order Bills of Lading.

The British Colonial Secretary has called attention to the regulations respecting the use of manifests and bills of lading made out to order during the war and has requested that a notice similar to that issued in Great Britain may be issued in Canada. The notice mentioned calls the attention of shippers, shipowners and the trading community generally to the fact that in time of war the practice of shipping goods with bills of lading made out to order, which was made illegal by sec. 4 of the Customs War Power Act, 1915, in the case of goods shipped from the United Kingdom under license, is very undesirable in respect of any goods, exported from any part of the British Empire. Shippers not requiring licenses are therefore advised not to make out bills of lading to order, but only to a named consignee or to a bank or financial house of high standing, with the remark in the margin, "Notify John Smith," or the name of the person or firm for whom the goods are ultimately designed. Goods shipped to Holland should be consigned to the Netherlands Overseas Trust. It is essential during the war that, in the case of all goods shipped, whether by license or not, British ships should have on board throughout the voyage a full manifest of cargo and all bills of lading, or certified copies. Unless these requirements are complied with, there will be a risk that the ships will be stopped and diverted by His Majesty's ships or war vessels of the allied nations, in order to permit of full examination of the cargo, and the ascertainment of its destination. In the case of British ships that will touch at ports in countries contiguous to enemy territory, compliance with these requirements is of special importance and serious delay may result to ship and cargo in such cases if all ship's papers are not on board and in order.

Stranding of the s.s. Iroquois.

The Dominion Wreck Commissioner, Capt. L. A. Demers, assisted by Capts. J. B. Foote and Jas. McMaugh, held an enquiry at Toronto, Jan. 12, into the causes of the stranding of Canada Steamship Lines' s.s Irojuois at Hare Island shoal, St. Lawrence River, Nov. 27. The Canadian Lake Protective Association was represented by Francis King, M.A., Counsel, Dominion Marine Association. The court found that the evidence of the master, Capt. Hudson, was straightforward, but indicated a lack of ambition to acquire further knowledge of the work he was likely to be called on to perform, which is surprising in a young member of the profession, and borders on indifference. The court expressed the opinion that when a sailing master is engaged, the master should be instructed to the effect that he, the master, is still the responsible officer. In other cases, the court had urged that masters should show more loyalty to their owners by acquiring all the knowledge possible of conditions existing in the waters strange to them. The court characterized the evidence of T. R. Desjardins, the sailing master, as a tissue of contradictory statements, and doubted whether he clearly understood the import of questions addressed to him. In leaving the navigation of the vessel, without being relieved by a competent officer, he showed lack of a proper sense of responsibility. His navigation was indifferently done, and, as he considered himself legally the master of the vessel, his conduct cannot be condoned, and there is no justification for his carelessness. The court therefore suspended his certificate 6049 for nine months, from Jan. 20 to Oct. 20.

Great Britain and Shipbuilding in Canada.

Reports from New York state that in connection with the shortage of tonnage and the lack of activity in merchant shipbuilding in the United Kingdom, negotiations are in progress between the British and Canadian Governments, whereby it is hoped to draw upon Canadian shipyards to assist in the rehabilitation of the British mercantile marine. It is also stated that British shipowners under present conditions cannot afford to pay the high prices asked for new foreign built tonnage, and have urged some arrangement with the colonies and dominions which would make possible the acquisition of ships at lower prices than those generally quoted, and that the action of Canadian shipbuilders in accepting contracts from Norwegians and others has aroused considerable adverse criticism.

Canadian Railway and Marine World for January contained some remarks on this matter, and commented on the fact that some of the Norwegian contracts were being hawked about England, at prices ranging from $135 to $145 a ton, which is, undoubtedly, somewhat higher than is asked by shipbuilders in Canada. There are numerous yards in the Dominion quite capable of turning out vessels entirely suitable for ocean freight service, in fact several vessels now engaged in ocean service were built in Canadian yards, and it remains for the purchaser in Great Britain to make greater use of the facilities offered on this side, now that British yards are so fully occupied with other matters of a more important nature.

Wooden Shipbuilding in British Columbia.

Canadian Railway and Marine World has already published considerable information regarding the type of vessel now under construction in British Columbia shipyards for the Canada West Coast Navigation Co. These vessels, six of which are being built by Wallace Shipyards, Ltd., North Vancouver, and three by Cameron - Genoa Mills Shipbuilders Ltd., Victoria, will be of the following dimensions: Length over all, 260 ft.; length of keels, 225 ft.; beam, 44 ft.; depth of hold, 20 ft. The carrying capacity of each vessel will be from 1,500,000 to 1,750,000 ft. of lumber. In order to handle the greater lengths of stock timber, bow and stern ports are provided, and the cargo will be shipped and discharged by 4 regulation winches supplied with steam by a 6 x 11 ft. Scotch boiler at 130 lbs.

Each vessel will be equipped with two 2-cylinder Bolinder semi-Diesel engines of 160 h.p., working at 225 r.p.m. and turning a 3-bladed propeller. If operated

List of Steam Vessels Registered in and During October and November, 1916.

No.	Name	Port of Registry	Where and When Built		Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner
138230	Cadiliac	Montreal	South Chicago, Ill.	1892	235 1	36 8	15 4	1297	732	254 sc.	Canada Steamship Lines, Ltd., Montreal
134469	Clincher	Halifax, N.S.	Camden, N.J.	1892	132 6	25 4	16 0	368	66	81 sc.	Canadian Salvage Association Ltd., Montreal
111065	Dan. M. Munro	Windsor, N.S.	Dumbarton, Scotland	1892	220 7	35 0	21 0	1216	888	18 sc.	Newport Plaster, Min'g & Mfg. Co. Windsor, N.S.
134591	Elsie McDonald	Paspebiac, N.B.	Cross Point, Que.	1915	56 4	22 1	4 0	54	33	5 pd.	J. L. McDonald, Campbellton, N.B.
138341	Eug. F. Moran	Halifax, N.S.	Philadelphia, Pa.	1902	96 0	22 1	10 9	192	49	43 sc.	Capt. W. H. Owen, R.E., rep. His Majesty's Sec. of
134605	Fort McMurray	Winnipeg	McMurray, Alta.	1915	151 0	28 3	4 5	661	397	80 sc.	Hudsons Bay Co., London, Eng. [State for War.
134417	F. B. Stevens	Sarnia, Ont.	Buffalo, N.Y.	1867	146 0	29 3	11 0	516	269	47 sc.	American Transit Co., Sarnia, Ont. [State for War.
138342	Julia C. Moran	Halifax, N.S.	Philadelphia, Pa.	1902	96 0	22 1	10 9	192	49	43 sc.	Capt. W. H. Owen, R.E., rep. His Majesty's Sec. of
134470	M. Moran	" "	Camden, N.J.	1912	109 0	24 7	14 5	315	111	54 sc.	Canadian Salvage Association Ltd., Montreal
134468	Petrel	" "	Port Richmond, N.Y.	1915	123 7	26 3	15 3	540	367	65 sc.	" " "
134513	Royalite	Sarnia, Ont.	Collingwood, Ont.	1916	250 0	43 2	16 7	2052	1542	95½ sc.	Imperial Oil Co., Sarnia, Ont.
134270	Schoolcraft	Midland, Ont.	Trenton, Mich.	1884	185 0	34 0	14 2	972	690	80 sc.	Manley Chew, Midland, Ont.
134528	Wm. Edwards	Sydney, N.S.	Abbott's Bridge, O.	1879	226 0	35 8	18 2	1336	831	107 sc.	William Edwards Steamship Co., Sydney, N.S.

List of Sailing Vessels and Barges Registered in and During October and November, 1916.

No	Name	Port of Registry	Rig	Where and When Built		Length	Bieadth	Depth	Reg. Tons	Owner or Managing Owner
133895	Ada Tower	Parrsboro, N.S.	Schr.	Port Grenville, N.S.	1916	175 5	36 4	12 9	528	G. M. Cochrane, M.O., Fox River, N.S.
138229	Agnes Wilson	Montreal	Barge	Charlamange, Que.	1916	126 0	27 3	7 8	225	St. Maurice Paper Co., Montreal
133896	CumberlandCounty	Parrboro, N.S.	Schr.	Advocate Harb., N.S.	1916	162 2	35 9	12 4	419	J. N. Pugsley, Parrsboro, N.S.
138256	Glacier	Lunenburg, N.S.	"	Lunenburg, N.S.	1916	112 0	26 2	10 4	99	L. Knock, Rose Bay, N.S.
138191	James Slater	Liverpool, N.S.	"	Port Jefferson, N.Y.	1916	114 9	28 9	9 9	282	Publicover Shipping Co., Dublin Shore, N.S.
138255	Marian J. Smith	Lunenburg, N.S.	"	Liverpool, N.S.	1874	128 2	33 8	11 4	332	W. C. Smith, M.O., Lunenburg, N.S.
138256	Norma L. Conrad	" "	"	Mahone Bay, N.S.	1916	102 6	26 2	10 5	99	J. E. Backman, La Have, N.S.
138066	P.W.D. No. 112	Ottawa	Dredge	Sturgeon Falls, Ont.	1905	66 6	24 9	7 2	161	Department of Public Works, Ottawa, Ont.
138067	P.W.D. No. 118	" "	"	Mattawa, Ont.	1902	60 0	25 6	5 6	138	" " "
134618	Shipman No. 4	Sault Ste. Marie, Ont.	Scow	Wiarton, Ont.	1911	110 0	24 4	7 0	164	S. Shipman, ault Ste. Marie, Ont.

continuously and under full load without canvas, 12 barrels of oil would be consumed in 24 hours, maintaining a speed of 7 knots an hour. Greater speed can of course be made with a spread of canvas in addition. Storage will be provided for 8,000 barrels of oil, and for 5,000 gallons of fresh water. The advantages of auxiliary power in lumber schooners are many, and it is claimed, justify the cost of installation. The saving in towage, and of time in the calm areas, and the greater speed obtainable, are factors in increasing the vessel's earning power and general utility. The speed obtained will compare favorably with many steamships used for coasting purposes, and the advantages to be considered, include saving of space, fuel economy and reduction of engine room labor. The engines of this type require about half the space taken by engines and boilers of similar power, and also weigh about half. The fuel cost will average about 25c an hour, and three men will be employed in the engine room. It is claimed that vessels of this type will pay for themselves in half the time in which a steel vessel will take to work out her cost. They will follow the latest and best practice of the builders of United States schooners designed primarily for the lumber trade, and will be of very heavy construction, the plans have been approved by Lloyd's Register of Shipping and they are to be given the highest rating, A.1 for 13 years. This, we are advised, is the first time that Lloyd's have classed any vessel of this type on the Pacific coast. The vessels will be provided with two large hatches and four cargo winches of the latest type designed for rapid handling of cargo. Vessels of this type carry approximately 50% of their cargo on deck, and they are designed chiefly for the off shore lumber trade. The cost of these vessels complete will be about $175,000. They were designed by J. H. Price, who designed and built the vessel City of Portland, a large auxiliary motor ship, at St. Helens, Ore., which attracted a great deal of attention in marine circles.

The Mabel Brown and Geraldine Wolvin are the two first vessels to be launched, and they have been chartered to the Canadian Trading Co., for loading lumber in March or April, at Vancouver, for Sydney, Australia, at 120 shillings, and for Melbourne, Australia, at 130 shillings.

Among the Express Companies.

C. N. Spooner, heretofore route agent, Dominion Ex. Co., Moose Jaw, Sask., has been appointed route agent at Winnipeg.

The Canadian Ex. Co. has opened offices at Kent Jct. and Lac Baker, N.B.; Murray Bay, Que., and Canfield Jct., Ont.

E. F. McDonald has been appointed agent, Canadian Northern Ex. Co., Trenton, Ont., vice E. B. Connelly, enlisted for overseas service.

Wm. Cunningham Scott, who died recently, was the Canadian Express Co.'s agent at the city of Quebec for many years. He started work with the old British & Canadian Express Co., at Quebec, in 1853. Up to that time the express business had been carried by stage coach, and as Quebec City was then without rail facilities his first duties were to attend to shipments sent out by stage. During the succeeding years, the G.T.R. built into Point Levis, opposite Quebec. He had many reminiscences of the difficulties encountered in ferrying produce across the St. Lawrence River, in scows, for transshipment by rail. The British & Canadian Express Co. eventually became part of the Canadian Express Co.'s system and he continued as agent at Quebec. Six years ago, after nearly half a century of service, he retired from active work.

Telegraph, Telephone and Cable Matters.

Chas. Cassils, Montreal, has been elected Vice President, Bell Telephone Co. of Canada, succeeding Hon. Robert Mackay, deceased.

W. J. Kane, heretofore Inspector of Telegraphs, C.P.R., Brandon, Man., has been appointed Night Chief Operator, C.P.R. Telegraphs, Winnipeg.

The Dominion Public Works Department has had set apart, for a telegraph site, about an acre of Dominion lands, in the n.e. ¼ of sec. 30, Tp. 70, R. 19, w. 4 m.

William Cross, who died at Caledonia Springs, Ont., recently, was engaged in the construction of the first telegraph line to be erected between Ottawa and Montreal.

M. J. Bayley, assistant chief operator, C.P.R. Telegraphs, Toronto, died there, Jan. 7, from pneumonia, after a short illness, aged 45. He had been in C.P.R. service for about 25 years.

A. E. Holmes, heretofore chief operator, Great North Western Telegraph Co., Saskatoon, Sask., has been appointed assistant chief operator at Winnipeg, vice A. D. Campbell, promoted.

A. D. Campbell, heretofore assistant chief operator, has been appointed chief operator, Great North Western Telegraph Co., Winnipeg, vice B. S. Round, who has left the company's service.

W. Rutherford, heretofore Traffic Chief, C.P.R. Telegraphs, Winnipeg, has been appointed Inspector of Telegraphs, C.P.R., Brandon, Man., vice W. J. Kane, who was appointed to that position during last summer on the enlistment of F. E. Camp for active service.

Hon. F. Nicholls, President, Canadian General Electric Co., and Canadian Allis Chalmers Co., and a director, Canadian Northern Ry., and Toronto Ry., has been elected a director of the Great North Western Telegraph Co., in place of the late Hon. J. K. Kerr.

The Great North Western Telegraph Co.'s office fixtures, switchboards, instruments, etc., at St. Catharines, Beamsville, Jordan, Merritton and Niagara Falls, Ont., were destroyed by fire Jan. 12, owing to a high tension wire falling across the telegraph line near Grimsby.

Application is being made to the Dominion Parliament for the incorporation of the British American Telephone & Telegraph Co., to erect and operate telephone and telegraph lines, wireless telegraph stations, etc., in Canada and elsewhere. Pringle & Guthrie, Ottawa, are solicitors for applicants.

A. A. Rogers, heretofore night chief operator, has been appointed chief operator, Great North Western Telegraph Co., Saskatoon, Sask., vice A. E. Holmes, transferred; F. F. Yerex, heretofore all night chief operator, has been appointed night chief operator, vice A. A. Rogers; and R. W. Pearsall has been appointed

The Board of Railway Commissioners has issued order 25754, Dec. 27, 1916, respecting the Great North Western Telegraph Co.'s tariff C.R.C. 47, increasing the rate on words in excess of 10 words in messages between the company's offices in Ontario, Quebec and New Brunswick. The question having arisen as to the company's power to increase rates in view of the limitation imposed by the act consolidating and amending the acts relating to the Montreal Telegraph Co., and the Board having at the company's request submitted the question for the opinion of the Supreme Court of Canada, it is ordered that pending the Supreme Court's decision, and until further order, the effective date of the proposed tariff is postponed. This application was specially brought to the Board's attention by the Great North Western Telegraph Co., for a settlement of the question as to whether the present rate of 25c for 10 words and 1c for each additional word, in the provinces named, is permanently fixed by statute, or not. The question came up when the Board recently made a general enquiry into telegraph rates, and the company claims that a certain act fixing these rates never came into force and effect.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The Coleman Fare Box Co., Ltd., is removing its plant from Tottenham, Ont., where the business was founded, to Toronto, where it has leased premises at 1191 Bathurst St. The head office will remain at 70 Bond St., Toronto.

Wall Calendars for 1917 have been received from J. Bertram & Sons Co., Ltd, machine tools, Dundas, Ont.; W. W. Butler Co., Ltd., railway, marine and mining supplies, Montreal; Pratt & Whitney Co. of Canada, Ltd., small tools, Dundas, Ont.; Taylor & Arnold, Ltd., railway and contractors' supplies, Montreal.

Electric Service Supplies Co., Philadelphia, Pa., which is represented in Canada by Lyman Tube & Supply Co., Ltd., has issued a catalogue of golden glow headlights, searchlights and projectors, 52 pgs., containing illustrated descriptions of these articles and particularly dealing with marine searchlights for vessels and harbor service.

Lyman Tube & Supply Co. Ltd., to supplement its service from its Montreal and Toronto stocks of steam and electric railway supplies, tubing, metals and mechanical equipment, has established a purchasing office at 2606 Equitable Building, New York, N.Y., under K. E. Gury's management, to locate and secure promptly from existing, but closely held, stocks, materials and equipment on which manufacturers will not promise early delivery

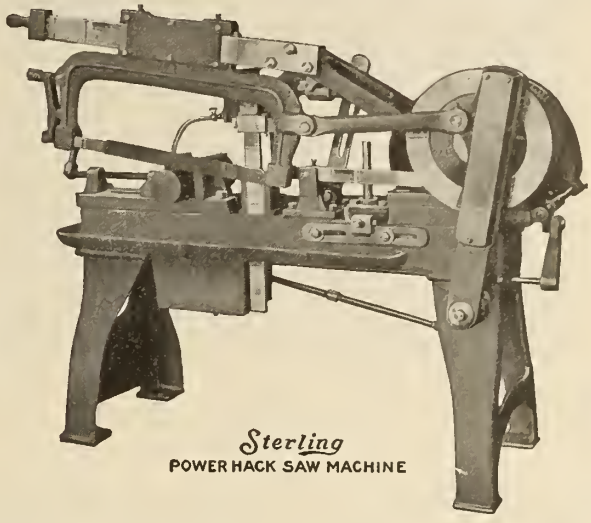
Canadian Westinghouse Co., Ltd., has been authorized to increase its capital stock from $5,000,000 to $10,000,000, in 50,000 shares of $100 each. The company will issue $1,250,000 of new stock at par to shareholders of record Feb. 1 in the proportion of one share for every four shares held on that date. The directors, out of the profits accumulated since the company's inception 12 years ago, have declared a dividend of 25%, payable Mar. 1, to shareholders of record Feb. 1. This dividend will be used in payment of stock subscriptions. In effect the company's cash dividend is thus a stock dividend, since the cash bonus will pay for the new stock.

Transportation Conventions in 1917.

Mar. 20-22.—American Railway Engineering Association, Chicago, Ill.
May.—Association of Railway Claim Agents, Louisville, Ky.
May 1-4.—Air Brake Association, Memphis, Tenn.
May 9-11.—Railway Development Association, Louisville, Ky.
May 14-17.—International Railway Fuel Association, Chicago, Ill.
May 15-16.—International Association of Ticket Agents, Banff, Alta.
May 16.—American Railway Association, New York.
May 22-25.—Master Boiler Makers' Association, Richmond, Va.
May 30.—Association of American Railway Accounting Officers, Richmond, Va.
June.—American Association of Freight Agents, Denver, Col.
June 13-16.—American Railway Master Mechanics' Association, Atlantic City, N.J.
June 18-21.—Master Car Biulders' Association, Atlantic City, N.J.
June 19.—Freight Claims Association, Banff, Alta.
August.—International Railroad Master Blacksmith's Association, Chicago, Ill.
Aug. 8-10.—American Association of Railroad Superintendents, Minneapolis, Minn.
September.—Railway Signal Association, Atlantic City, N.J.
Sept. 11.—Master Car and Locomotive Painters Association of the United States and Canada, Chicago, Ill.
Oct. 16-20.—National Association of Railway Commissioners, Washington, D.C.
Sept. 18-20.—Association of Railway Telegraph Superintendents, Washington, D.C.
Sept. 18-21.—Roadmasters and Maintenance of Way Association, Chicago, Ill.
October.—American Association of Dining Car Superintendents, San Francisco, Cal.
October.—Railway Real Estate Association, Duluth, Minn.
Oct. 16-18.—American Railway Bridge and Building Association, St. Paul, Minn.

The name of the s.s. Nile, owned by the Dominion Public Works Department, has been changed to Montmorency.

"STERLING" High Duty Power Hack Saw Machine



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REQUESTS

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TO SAVE MONEY FOR THE

NEXT WAR LOAN

JAN. 9, 1917

DEPARTMENT OF FINANCE
OTTAWA

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Granville Street, Vancouver, B.C.

Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.

Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

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JAN. 9, 1917

FINANCE DEPARTMENT
OTTAWA

THE TORONTO, HAMILTON AND BUFFALO RAILWAY COMPANY.

Notice is hereby given that The Toronto, Hamilton and Buffalo Railway Company, will apply to the Parliament of Canada, at its next session, for an Act ratifying and confirming an agreement made between The Hamilton and Dundas Street Railway Company and The Toronto, Hamilton and Buffalo Railway Company, dated 17th June, 1897, making certain traffic arrangements or agreements authorized by section 364 of The Railway Act, for a term of fifty years; and extending the time within which it may proceed to construct, complete and put into operation the railway which it has been authorized to construct between Port Maitland and Port Colborne by section 8 of chapter 65 of the Statutes of 1914; and also for power to lay out, construct, maintain and operate a line of railway between Welland and Port Colborne, in the Townships of Crowland and Humberstone, in the County of Welland, Province of Ontario; and also for authority to the company to make and enter into with The Michigan Central Central Railroad Company, The Canada Southern Railway Company and The Grand Trunk Railway Company of Canada or any of them, any of the arrangements or agreements authorized to be made between railway companies by section 364 of The Railway Act for a term exceeding twenty one years; and also to authorize the company to take and hold stock in any navigation or steamboat company, and for other purposes.

Hamilton, 29th December, 1916.

E. D. CAHILL,
General Solicitor.

CANADIAN NORTHERN QUEBEC RAILWAY COMPANY.

NOTICE is hereby given that the Canadian Northern Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time within which the company may commence and construct its authorized line of railway between or near St. Jerome and St. Eustache.

GERARD RUEL,
Chief Solicitor.

Toronto, 5th January, 1917.

MOUNT ROYAL TUNNEL AND TERMINAL COMPANY, LIMITED.

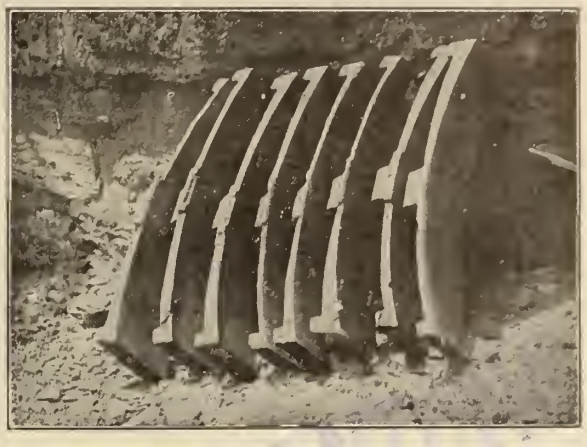
NOTICE is hereby given that the Mount Royal Tunnel and Terminal Company, Limited, will apply to the Parliament of Canada, at its next session, for an Act extending the time within which the company may construct its tunnel and works and lines of railway authorized by section 2 of chapter 74 of the Statutes of Canada for the year 1912.

GERARD RUEL,
Chief Solicitor.

Toronto, 5th January, 1917.

GRIFFIN & BRINKERHOFF
P.O. Box 97, Windsor, Ont.
Canadian manufacturers of the Celebrated Wheel Truing Brake Shoe. Best Wheel Grinders in the World.

Reinforced Brake Shoes



wear as shown above, before they are scrapped and they wear safely, too. You get your full money's worth in satisfactory service from them always.

Reinforced Car, Coach and Driver Shoes are absolutely essential for safe and economical operation in all classes of railway service.

Manufactured in Canada.

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"BEATTY" HOISTS

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Derrick car engined with an 8 x 12 four drum Beatty Hoist placing an 80 foot deck plate girder span in Skugog River Bridge.

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Hoisting Engines, Steel Derricks, Derrick Irons, Electric Hoists, Clamshell Buckets, Centrifugal Pumps, Dredges, Steel Scows, etc.

We will gladly send full information.

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"Dominion"

and

"Springhill"

Steam and Gas Coals

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Lachine Bridge

Engineers, Manufacturers and Erectors of Steel Structures.
CAPACITY 135,000 TONS.

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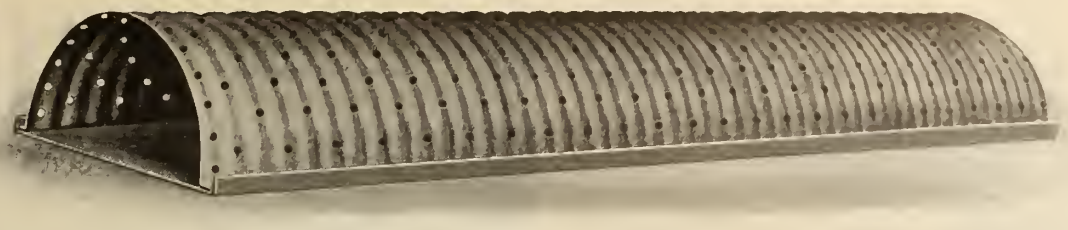

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PEDLAR'S "Perfect" Perforated DRAINS

Just think what a small margin of difference there may be between a soft spot or a bad joint in your track and a disastrous wreck.

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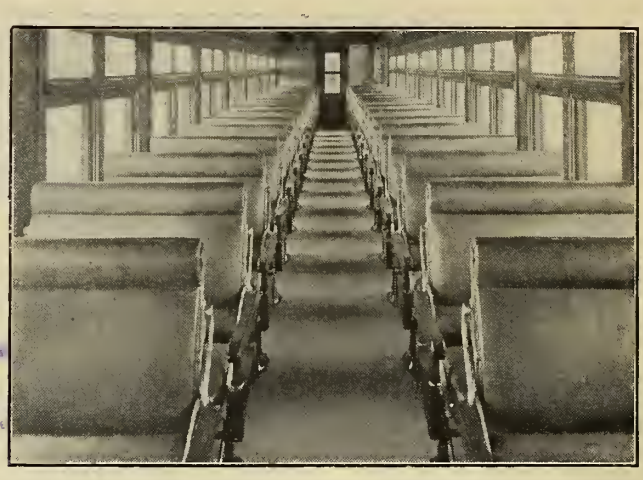

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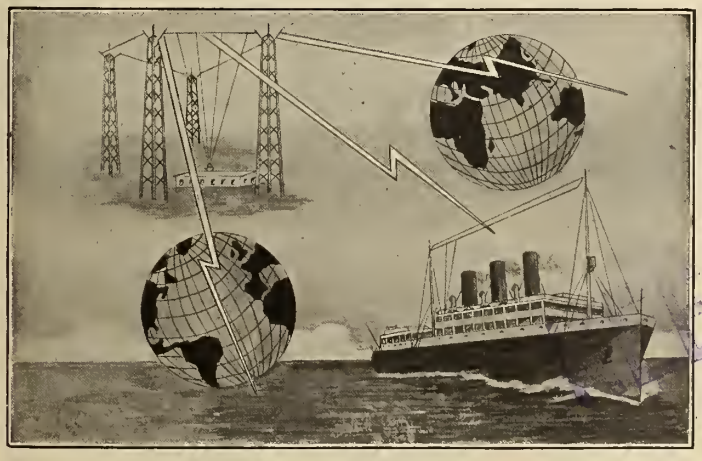

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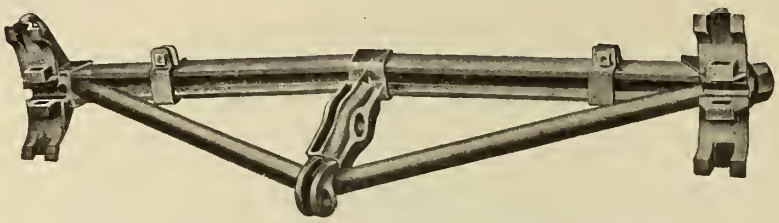

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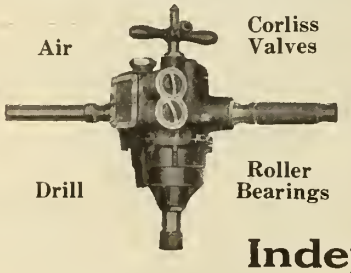

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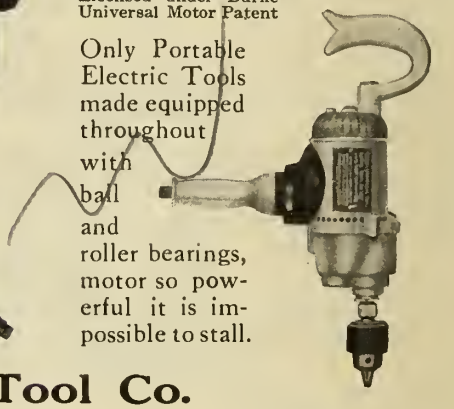

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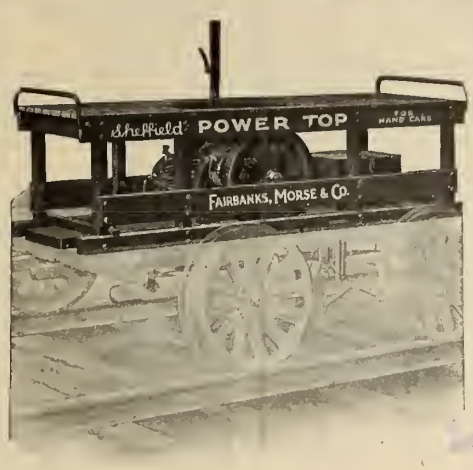

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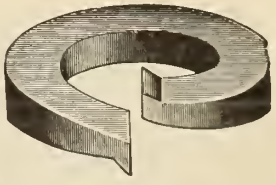

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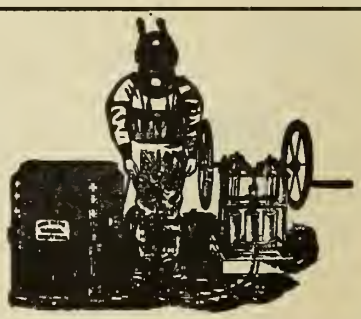

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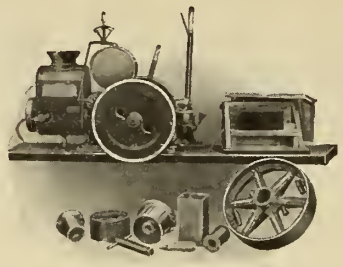

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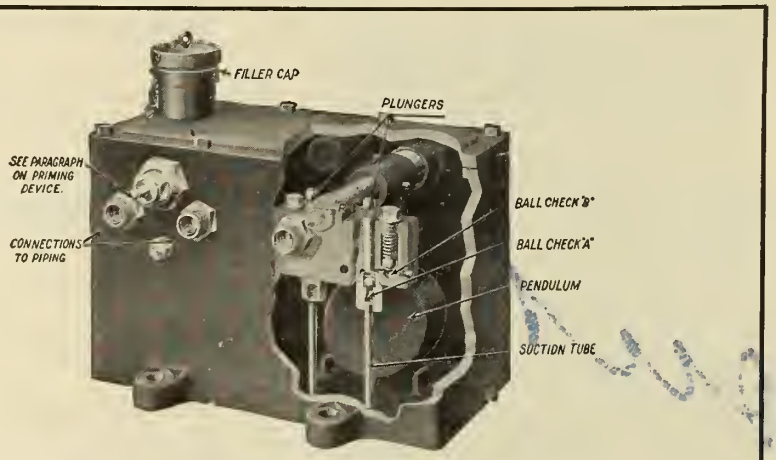

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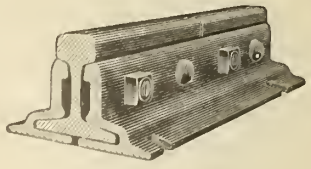
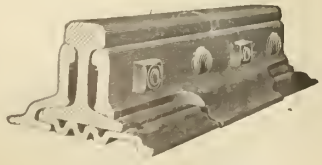
The Rail Joint Company of Canada, Limited

McGill Bldg., MONTREAL

36 Broad Street, London, E.C.



CONTINUOUS



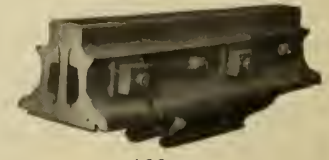
WOLHAUPTER

Continuous,
Weber, Wolhaupter and
100 p.c. Rail Joints.

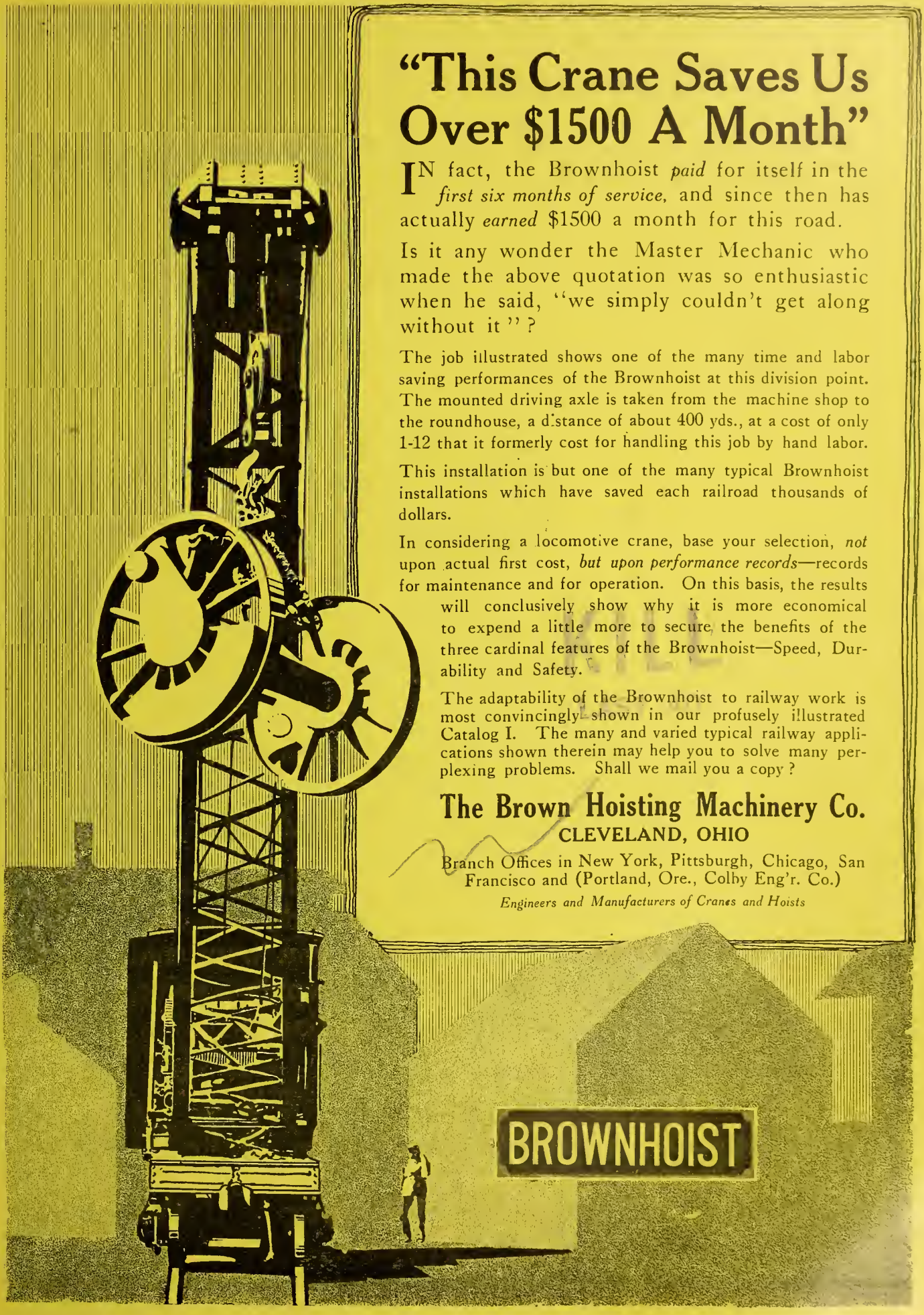
Standard—Insulated
Step—Frog and Switch
Protected by Patents.

Grand Prize, San Francisco, 1915.

WEBER



100 p.c.



"This Crane Saves Us Over $1500 A Month"

IN fact, the Brownhoist *paid* for itself in the *first six months of service*, and since then has actually *earned* $1500 a month for this road.

Is it any wonder the Master Mechanic who made the above quotation was so enthusiastic when he said, "we simply couldn't get along without it"?

The job illustrated shows one of the many time and labor saving performances of the Brownhoist at this division point. The mounted driving axle is taken from the machine shop to the roundhouse, a distance of about 400 yds., at a cost of only 1-12 that it formerly cost for handling this job by hand labor.

This installation is but one of the many typical Brownhoist installations which have saved each railroad thousands of dollars.

In considering a locomotive crane, base your selection, *not* upon actual first cost, *but upon performance records*—records for maintenance and for operation. On this basis, the results will conclusively show why it is more economical to expend a little more to secure the benefits of the three cardinal features of the Brownhoist—Speed, Durability and Safety.

The adaptability of the Brownhoist to railway work is most convincingly shown in our profusely illustrated Catalog I. The many and varied typical railway applications shown therein may help you to solve many perplexing problems. Shall we mail you a copy?

The Brown Hoisting Machinery Co.
CLEVELAND, OHIO

Branch Offices in New York, Pittsburgh, Chicago, San Francisco and (Portland, Ore., Colby Eng'r. Co.)

Engineers and Manufacturers of Cranes and Hoists

General Service R.P.V.

Forced to Retire

After having served many years not wisely but too well, General Service Rubber Pump Valve has had to retire before the rubber pump valve made to suit the work expected of it.

KILL
LAST AD.

WE MAKE thousands of "ANCHOR" valves from 2-ins. to 54-ins. every year to suit many different conditions.

This gives us experience and knowledge.

To Obtain Good Valves

With your order, give us the conditions under which they will be expected to work, temperature and pressure, the number you want and sizes. We will recommend and supply a valve, and stand behind our recommendation.

Canuck Supply Co., Limited

Montreal **Toronto** **Winnipeg** **Vancouver**

Canadian Railway AND Marine World

ESTABLISHED 1898.

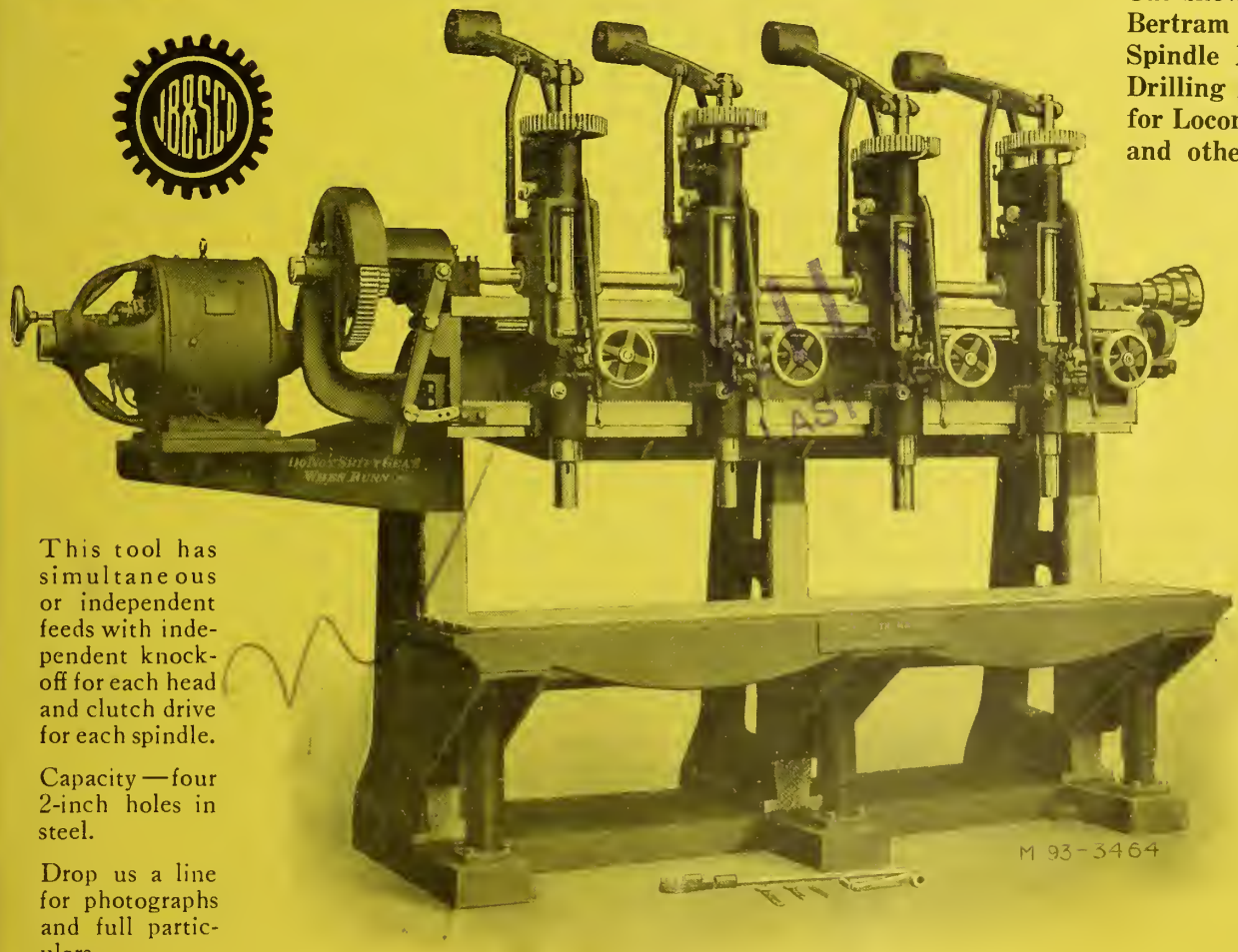
Number 229 | TORONTO, CANADA, MARCH, 1917 | Subscription Rates, Page 103

BERTRAM MACHINE TOOLS

Multiple Drills

OF EVERY DESCRIPTION

Cut shows Bertram Four-Spindle Multiple-Drilling Machine for Locomotive and other work.



This tool has simultaneous or independent feeds with independent knock-off for each head and clutch drive for each spindle.

Capacity—four 2-inch holes in steel.

Drop us a line for photographs and full particulars.

THE JOHN BERTRAM & SONS CO., LIMITED, Dundas, Ont., Canada

MONTREAL	TORONTO	VANCOUVER	WINNIPEG
723 Drummond Bldg.	1002 C. P. R. Bldg.	609 Bank of Ottawa Bldg.	1205 McArthur Bldg.

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National Portable Motor-Driven Air Compressors

Built in capacities ranging from 11 to 300 cu. ft. of free air per minute.

Twenty-Five Types to Select From

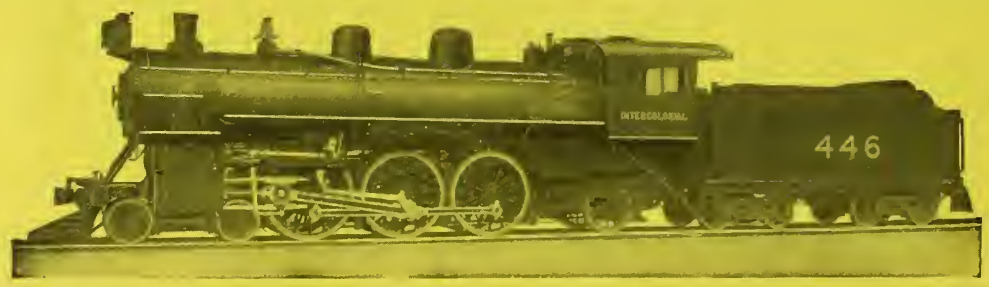
These outfits will be found most efficient and economical where floor space is limited, or the nature of the work requires that a supply of air be delivered in different places and under constantly changing conditions, because they can be easily moved from place to place—they eliminate the necessity of extensive piping.

Catalogue E-400 illustrates and describes these outfits.— Send for a copy to-day.

Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO, Traders Bank Bldg. MONTREAL, 52 Victoria Sq. OTTAWA, Ahearn & Soper, Ltd. HALIFAX, 105 Hollis St. FT. WILLIAM, Telfer Bldg.
WINNIPEG, 158 Portage Ave. E. CALGARY, Grain Exchange Bldg. VANCOUVER, Bank of Ottawa Bldg. EDMONTON, 211 McLeod Bldg.

Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE—INTERCOLONIAL RAILWAY
Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

Galena-Signal Oil Company

Works

Franklin, Pa., and Toronto, Ont.

Canadian Sales Office—603 Shaughnessy Bldg., Montreal, Que.

Sole manufacturers of the celebrated GALENA COACH, ENGINE and CAR OILS, and SIBLEY'S PERFECTION VALVE and SIGNAL OILS.

GUARANTEE COST per thousand miles for from one to five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organization of skilled railway mechanics of wide and varied experience. Services of Experts furnished free of charge to patrons interested in the economical use of oils.

STREET RAILWAY LUBRICATION A SPECIALTY

USE

Galena Railway Safety Oil

in Headlights, Marker and Classification Lamps, to secure Efficiency of Service, Maximum Candle Power, Clearness of Light.

Galena Long Time Burner Oil

for use in Switch and Semaphore Lamps, and all lamps for long time burning, to avoid smoked and cracked chimneys and crusted wicks.

Tests and Correspondence Solicited.

S. A. MEGEATH,
PRESIDENT.

Automatic Block Signaling

What It Will Do For You

An Appropriation for G-R-S Automatic Block Signals should not be considered as an expenditure but as a gilt-edge investment, for it not only safe-guards your traffic, which is worth the investment, but it also facilitates your traffic and reduces operating expenses which means increased earnings.

Affords Safety to Your Traffic

1st—By a signal indication if the block section one or two miles ahead is occupied by a train.

2nd—By a signal indication if a switch or drawbridge is open, or if a train or car standing on a siding fouls the main line.

3rd—By a signal indication, of any break in the track circuit due to broken or removed rails.

It Will Pay For Itself

1st—By protection against costly accidents and delays incident to them.

2nd—By enabling you to maintain better schedules with faster trains, thereby reducing train operating costs.

3rd—By increasing the capacity of your road for handling traffic.

4th—By reason of the advertising value of Automatic Block Signals, increased confidence and increased traffic.

You are cordially invited to inspect our signaling and interlocking devices at the National Railway Appliance Association Exhibit in the Chicago Coliseum, March 19 to 22 inclusive. This Exhibit will be held in connection with the annual meeting of the American Railway Engineering Association.

"Safety First"

GENERAL RAILWAY SIGNAL COMPANY

OF CANADA LIMITED

Office and Works, Lachine, Quebec

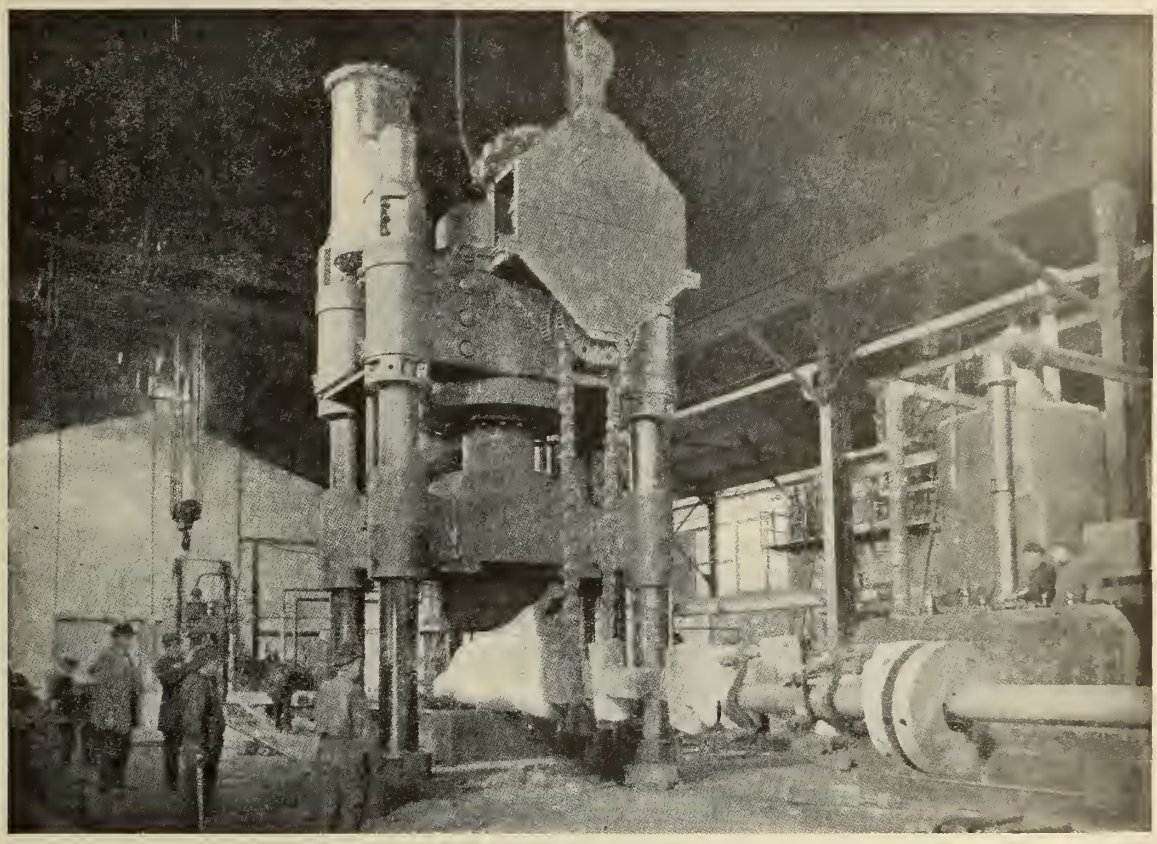
Branch Office, Winnipeg, Manitoba

Nova Scotia Steel & Coal Company

LIMITED

Manufacturers of Steel for Shrapnel Shells and Admiralty Forgings | Only Company in Canada producing Steel Ingots by the "Harmet" liquid process

Can supply Forgings up to 40 Tons in weight to all Admiralty and Lloyd's Tests and Specifications



FORGING A RUDDER FRAME

Why "Harmet" Liquid Process Steel Ingots are Superior to Ordinary Steel Ingots:—

1. Prevention of cracks due to shrinkage; of internal stresses and resulting cracks and fissures.
2. Early cessation in the crystallization of the metal, and the production of fine crystallization without cleavage planes.
3. Lessening of segregation, i.e,, reduction of tendency of carbon and other impurities to concentrate in the central and upper parts of the ingot.
4. Prevention of "pipes" or interior cavities, and thus preservation of absolute solidity in the ingot.
5. Improvement in physical properties.
6. Reduction in waste of ingot.

OUR modern Steam Hydraulic Forge Shop at New Glasgow, N.S., part of which is shown above, and our large Steel Plant at Sydney Mines, N.S., equal the very best in America.

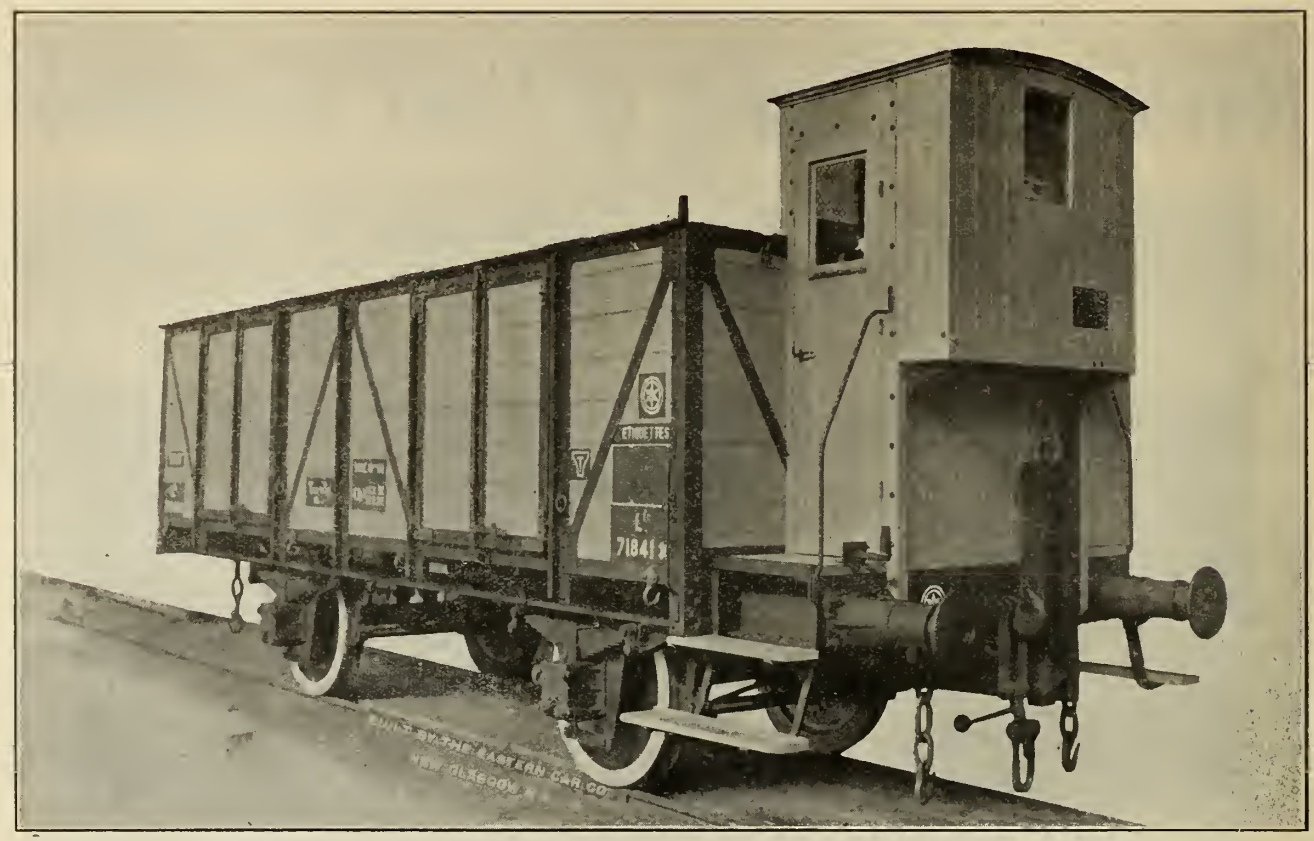
On the shortest notice, we can supply forgings of all shapes and sizes, made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods. It has always been the policy of "Scotia" to hold a position in the front rank of trade, and by the recent additions to plant, this policy has been maintained in a practical manner, bringing "Scotia's" equipment abreast of the best foreign forges.

For prices and full particulars, write to

Head Office, NEW GLASGOW, N.S.

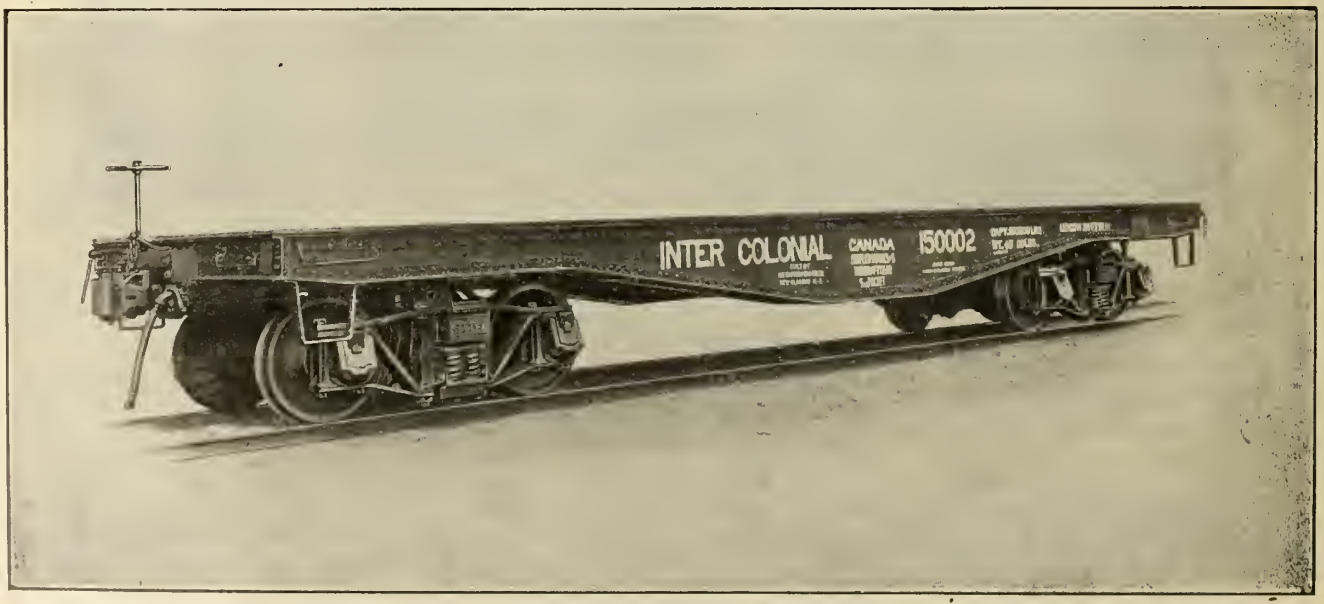
Western Sales Office, Room 14, Windsor Hotel, Montreal



ONE OF 2,000 GONDOLA CARS NOW UNDER CONSTRUCTION FOR THE FRENCH GOVERNMENT.

FREIGHT CARS TO FOREIGN ORDER

We have unexcelled water and rail shipping facilities for the export of freight cars of all types abroad or to United States markets. Our manufacturing capacity reaches to 40 cars per day. Although fully employed in filling and conducting negotiations for further foreign orders, our exceptional output facilities enable us both to take care of these and others in the order in which they are received.



75 TON SPECIAL PIT CAR FOR CANADIAN GOVERNMENT RAILWAYS.

FLAT CARS, CABOOSES, AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

Eastern Car Company, Limited

General Offices and Works, New Glasgow, N.S. **Montreal Office, Room 14 Windsor Hotel**

NORTH AMERICAN LIFE
ASSURANCE CO.

HEAD OFFICE - - - TORONTO

ANNOUNCES to its Policyholders and the Public that 1916 was another highly successful year as evidenced by the following outstanding figures:

Policies Issued and Revived	$10,189,539.00
Total Assurance in Force	59,685,112.00
Cash Income	2,912,514.00
Assets	16,442,713.47
Net Surplus	2,657,105.64
Profits Paid Policyholders	262,684.26
Total Payments to Policyholders	1,591,000.33

IN every important feature of the business marked increases were made.

Over One and a Half Million Dollars was paid to Policyholders or their beneficiaries during the past year.

PAYMENTS to policyholders over the past ten years amount to $10,481,146.00. Ask for a copy of the Annual Report.

L. Goldman, President and Managing Director

"SOLID AS THE CONTINENT"

Lt.-Col. D. McCrae, Second Vice President

W. K. George, First Vice President

Directors

Hamilton Cassels, K.C. — J. A. Paterson, K.C. — C. W. I. Woodland
John N. Lake — M. J. Haney — W. Cromwell Gurney

W. B. Taylor, Secretary; D. E. Kilgour, Actuary; T. D. Archibald, Medical Director; W. M. Campbell, Assistant Secretary; E. J. Harvey, Supervisor of Agencies.

Showing the construction of our geared jacks.

Celebrated "H & E" Lifting Jack

Our Patent Ball-Bearing Geared Jacks are Ideal in Railroad and Heavy Construction Work.

These Jacks are built for heavy service in bridge, roundhouse and wrecking work, are made with great care from the very best material and will be found the most satisfactory jacks for the purpose on the market.

High Grade Electric
STEEL CASTINGS
MANGANESE STEEL
For Crusher Jaws and Heavy Wear Parts

BRONZE
M.C.B. Standard Journal Bearings and Engine Bearings

Improved Reinforced Steel-Backed
BRAKESHOES
Locomotive Driver and Truck Shoes. Freight and Passenger Car and Electric Car Shoes.

Canadian Brakeshoe Company, Limited
SHERBROOKE, QUE.

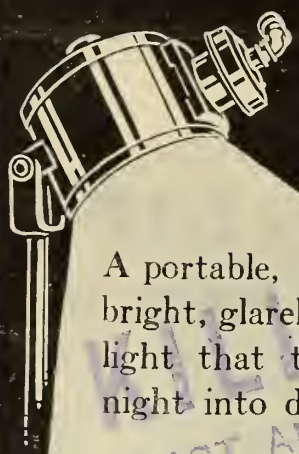
Sole Agents for Brakeshoes for Canada outside of B.C., Messrs. Taylor & Arnold, Limited, Montreal and Winnipeg. Sole Agents for B.C., The B.C. Equipment Co., Vancouver, B.C. Sole Agent for Lifting Jacks for Canada, F. H. Hopkins & Co., Montreal.

Rails, Cars, Locomotives
and Contractors' Equipment

IMMEDIATE SHIPMENT

John J. Gartshore
58 Front St. West
TORONTO

Malleable Castings High Grade Material First Class Service
Galt Malleable Iron Co., Limited - GALT, ONT.



ELECTRIC DAYLIGHT
WITH THE
Northern Electric
DAVIS
FLOOD LAMP

A portable, bright, glareless light that turns night into day.

It can be diffused over large areas or projected in a solid beam.

The light that lights Niagara

These Flood Lamps are ideal for lighting railroad terminals—freight yards—round houses—transfer yards and platforms—wrecking equipment – wherever working light is needed.

They can be used anywhere—no arc lamp trimming—no moving parts—no permanent wiring.
Write for our folder and tell us your lighting problems.

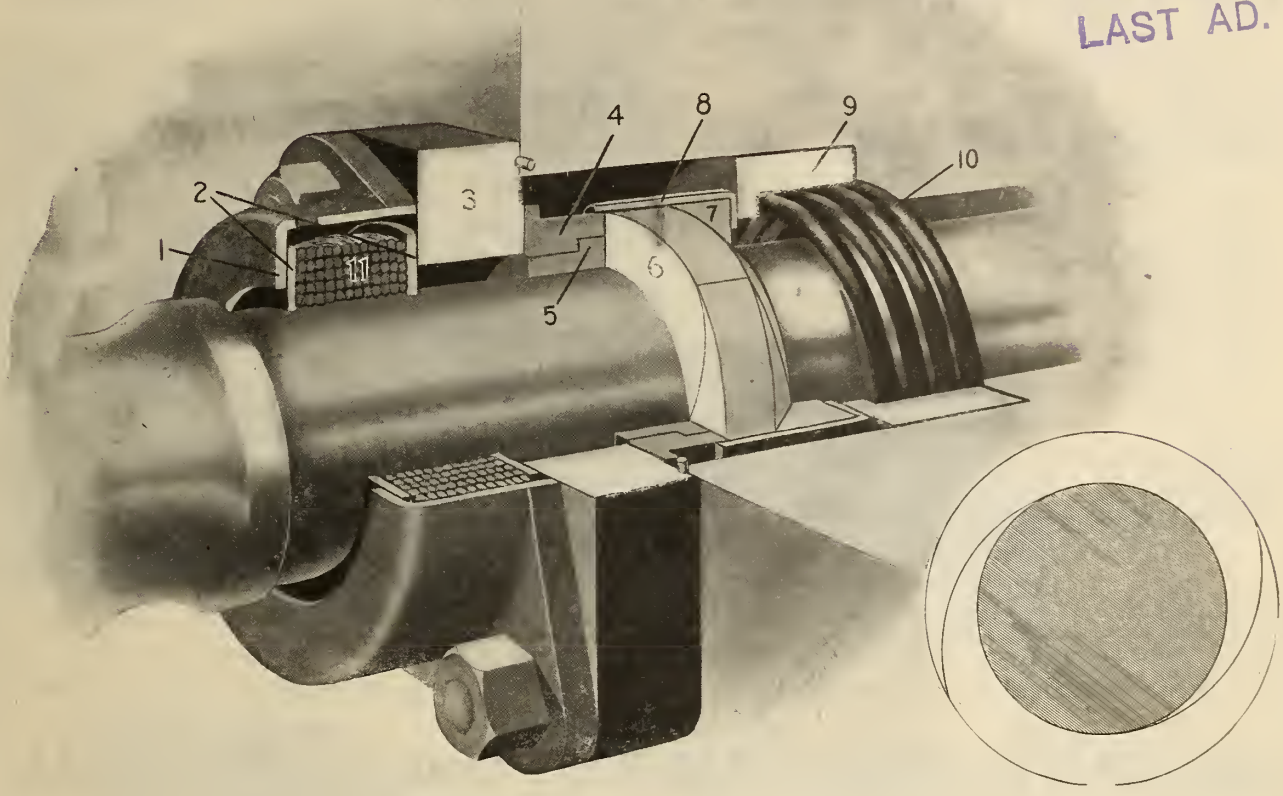
Northern Electric Company
LIMITED

MONTREAL OTTAWA WINNIPEG CALGARY
HALIFAX TORONTO REGINA VANCOUVER

KING Metallic Packing

For Locomotive Piston Rods,
Valve Stems and Air Pumps

KILL
LAST AD.



Piston Rod Packing

Note its extreme simplicity. The King packing ring itself (6) is in two parts only which interlock when on the rod. Other forms of packing now in use may be changed over to King easily and at small expense. Ask for full particulars which will explain why King is the standard packing on a majority of American trunk lines.

The United States Metallic Packing Company
PHILADELPHIA, PA.

Sole Representatives and Manufacturers in Canada

Canuck Supply Co., Limited

Montreal Toronto Winnipeg Vancouver

"DOMINION" Wire Rope

is the standard for all types of
DREDGES, HOISTS and
HAULAGE

The Dominion Wire Rope Company, Limited

Montreal and Toronto

Cut Down Unloading Time — Use General Service Cars

OTIS DUMP CARS

—PATENTED—

—PAMPHLET No. 16 TELLS ABOUT THEM—

Dumps Load In One Minute

—

One Man Operation

—

Simplest, Safest and Best Door Operating Gear

—

Dumps Clear of the Rail

THE STANDARD COAL CAR

Built in Any Size or Capacity.

—

All Steel, Wood or Composite

—

For Standard or Special Service

—

Thousands in Use

The Most Practical Car for all Bulk Freight. A Dumping Gondola for all Services.

DESIGNED AND BUILT BY

The HART-OTIS CAR CO., Limited, MONTREAL

—SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA—

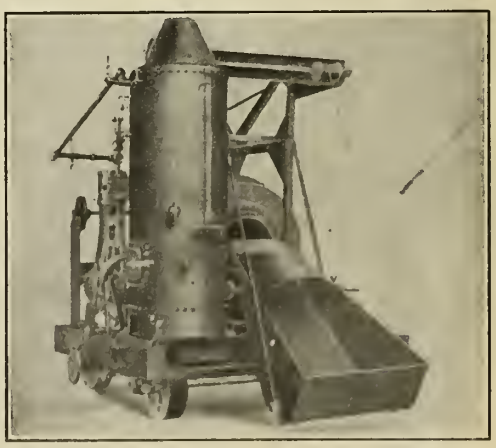
"HAYWARD" BUCKETS

For Quick Action

In Gravel Pit, Trench or Channel.

"RANSOME" MIXERS

Give the largest daily capacity with the lowest cost of upkeep.



JACKS — CAR REPLACERS — TOOLS

Branch:
108 Mail Building
TORONTO

F·H·Hopkins & Co

Head Office:
MONTREAL

Successful from the First

About two years ago when a Canadian steam road electrified, O-B Engineers submitted a new O-B Bond for application to the rail by oxy-acetylene welding without removing the splice bars.

It was adapted on the strength of our thorough investigations and tests.

Since then over 100,000 O-B Gas-Weld Bonds have been installed on more than 100 properties.

Actual operating experience has demonstrated conclusively that these bonds are satisfactory in every way.

Which is by the way characteristic of all O-B Products—Trolley Materials, Insulators and Rail Bonds.

Shall we tell you all about O-B Gas-Weld Bonding?

The Ohio Brass Company
MANSFIELD, OHIO

Norton Jacks

For all Classes of Service

10 to 100 Tons Capacity

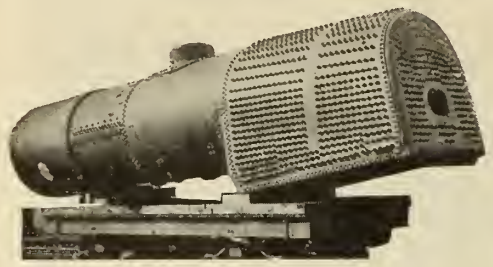
In Stock for Immediate Shipment.

Send for Illustrated Catalogue No. 29.

A. O. Norton, Limited

Coaticook, Prov. Que., Canada

Stock Carried by Canadian Agents: MUSSENS LIMITED
Montrea. Toronto Winnipeg Cobalt Calgary Vancouver



It is an Established Fact

That fireboxes of all types equipped with the Tate Flexible Staybolt show the lowest maintenance cost and highest earnings.

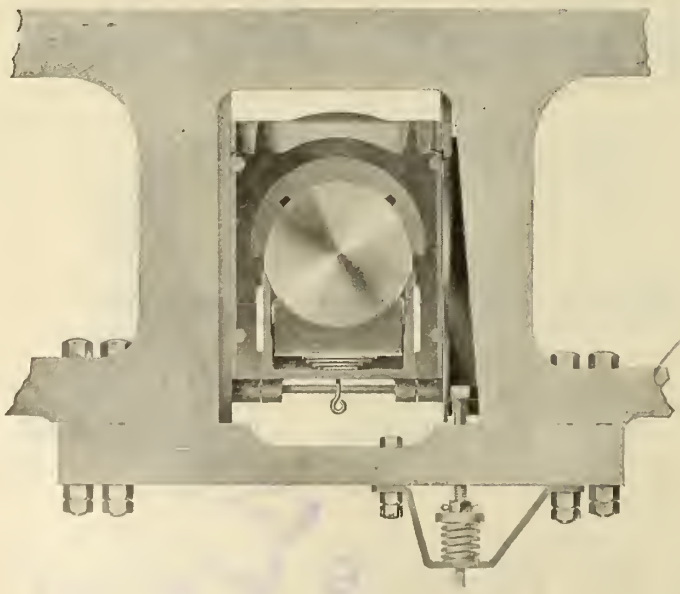
The Flexibility in the bolt serves to accomodate the relative expansion of plates under working operations of the fire box and boiler in a manner that has afforded less destruction to the sheets and seams than were found under conditions where fireboxes were rigidly stayed.

The Tate Flexible Staybolt is designed and made to give satisfactory results in the final measure of its usefullness, as an economic, safe and reliable factor in reducing the costs of firebox repairs and maintenance.

In use on all the prominent railroad systems of Canada.

FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.



Nothing to do to Their Wedges

Life is too short to spend taking up wedges in round houses.

It's done mile by mile all over the road by Franklin Automatic Adjustable Wedges. Engines come in with nothing to do to their wedges.

Make this clear to your management.

Franklin Railway Supply Company

TRANSPORTATION BLDG. MONTREAL

GRAND TRUNK RAILWAY SYSTEM

THE

DOUBLE TRACK ROUTE

WINTER TOURS to CALIFORNIA

AND ALL

PACIFIC COAST POINTS, FLORIDA, TEXAS, NEW ORLEANS, ETC.

Winter Tours Tickets now on sale. Stop over privilege allowed.

Apply to any Agent of the Company for particulars.

G. T. BELL,
Passenger Traffic Manager,
MONTREAL

W. S. COOKSON,
General Passenger Agent,
MONTREAL

RESULTS COUNT

That's Why 480 Railroad Shops Are Using Thermit

Thermit offers the only sure and reliable repair for locomotive frames and other heavy sections.

The superheated liquid Thermit steel is produced in bulk and poured all at once into a mold surrounding a broken section, resulting in the perfect amalgamation of the Thermit steel with the parts with which it comes in contact. The fact that those parts are first preheated, makes the weld doubly sure.

The operation of welding locomotive frames is easily accomplished, without removing the frame from position, and with very little dismantling, no matter if the frame be broken in the splice, jaw, next to the cylinder saddle, or at any other point. The engine is returned to service in from ten to twelve hours.

Hundreds of thousands of pounds of Thermit are being used annually by railroad companies in the United States and Canada.

There is only one reason for this, and that is that Thermit produces results and we all know that "results count."

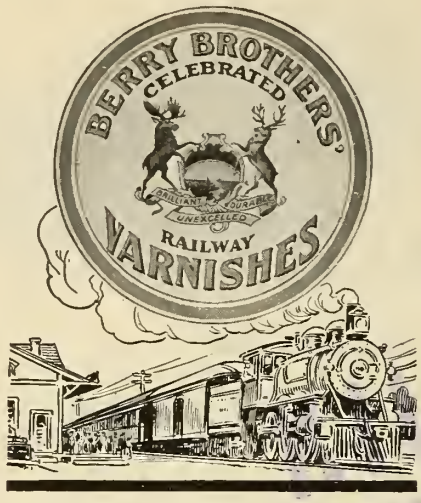
Our pamphlet No. 2144 will be of interest.

All Thermit and Thermit appliances are made in our Canadian shops.

GOLDSCHMIDT THERMIT COMPANY

103 Richmond St., W., Toronto, Ont.

329-333 Folsom St., San Francisco. Equitable Bldg., 120 Broadway, New York
7300 So. Chicago Ave., Chicago



Railway Varnishes

LIONOIL: This is a perfect non-corrosive or anti-rust coating for use on all metal surfaces where protection from rust or the elements is essential. This varnish is made in five colors,

BLACK RED DARK GRAY
MEDIUM GRAY LIGHT GRAY

Send for our catalog of railway varnishes.

D. W. H. Moreland,
Manager of
Railroad Department

BERRY BROTHERS
(INCORPORATED)
World's Largest Varnish Makers
TURIN WALKERVILLE, ONT. MELBOURNE

Metal Protection

In any kind of metal construction the element of rust is such a destructive factor that the best protection obtainable is unquestionably the cheapest.

CARTER'S DRY RED LEAD

is the highest standard quality and affords a perfect sealing coat that absolutely protects all kinds of metal from rust and corrosion.

We make Orange Dry Lead and Litharge also Special Dry Lead and Litharge for Color, Varnish and Rubber Makers. Oxides for Storage Batteries and Pottery.

All products are wholly Canadian made.

Quotations sent upon request.

The Carter White Lead Company, Limited
91 Delorimier Avenue, MONTREAL

Plan Your Summer Vacation Now

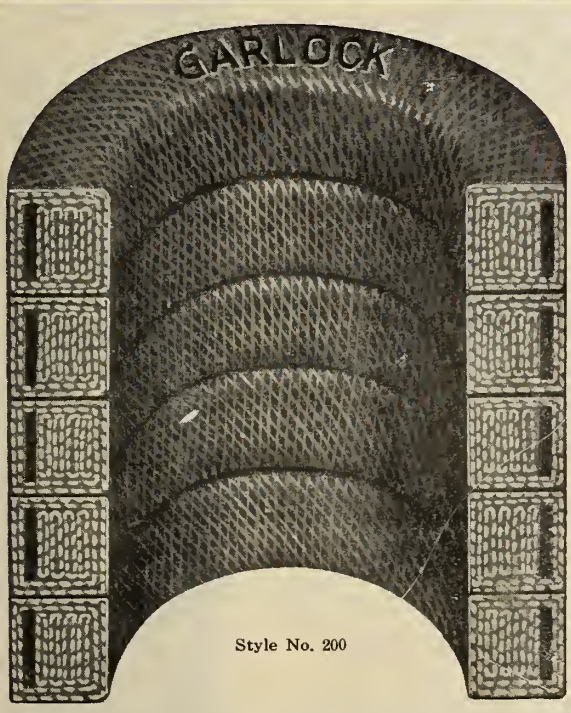
DECIDE to enjoy the rest and recuperation of Body and Brain in one of Canada's Famous National Playgrounds, where the delightful Climate, Magnificent Scenery and unlimited sporting possibilities combine to make the ideal recreation.

Grand Discharge of the Saguenay - Laurentide National Park
Rideau Lakes- Algonquin National Park - Muskoka Lakes
Georgian Bay - Hinterland - Nipigon Forest Reserve
Quetico National Park - Jasper National Park
and Mount Robson Park

All of which are served most conveniently by the **Canadian Northern.**

For Literature and further information apply to nearest C.N.R. Agent, or write to R. L. Fairbairn, General Passenger Agent, 68 King Street East, Toronto.

CANADIAN NORTHERN



Style No. 200

Garlock High Pressure Piston Rod Packing

Is built up in rectangular form and uniform shape and exact sizes are thereby obtained.

Asbestos packing, which is rolled around a rubber core and afterwards distorted by running through a square die, does not retain its shape or size.

The best materials we can buy are used in the manufacture of our high pressure packing.

The length of service obtained from it is greater than that secured from other makes, therefore the labor cost of applying and adjusting is less.

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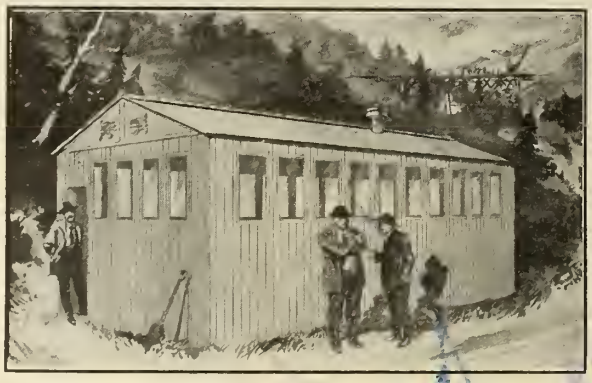

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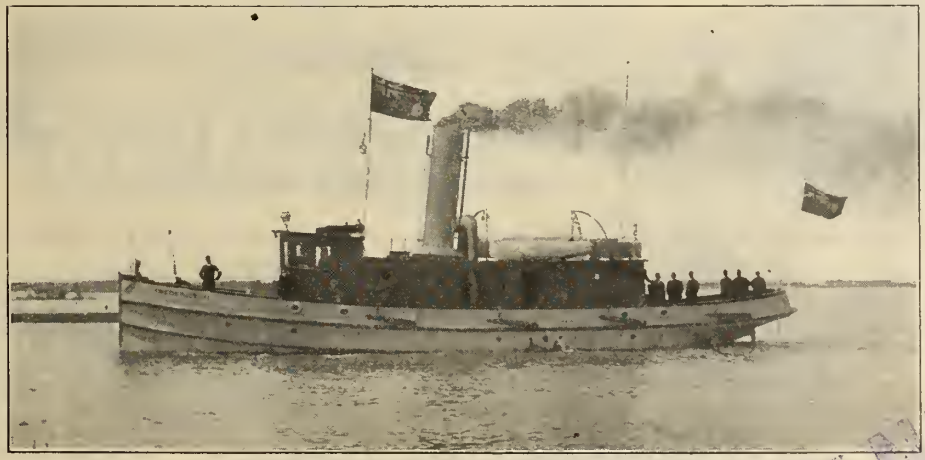

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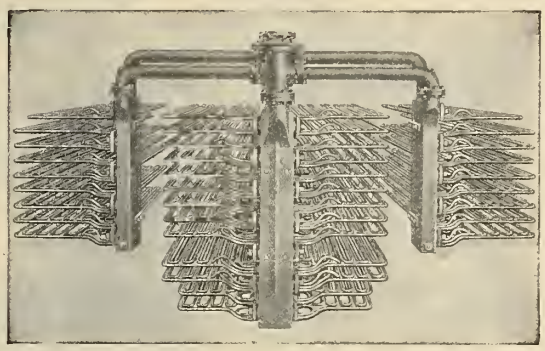

5. It results in a saving of fuel over saturated plants, both operating under the same draft conditions, of 10% to 20%.
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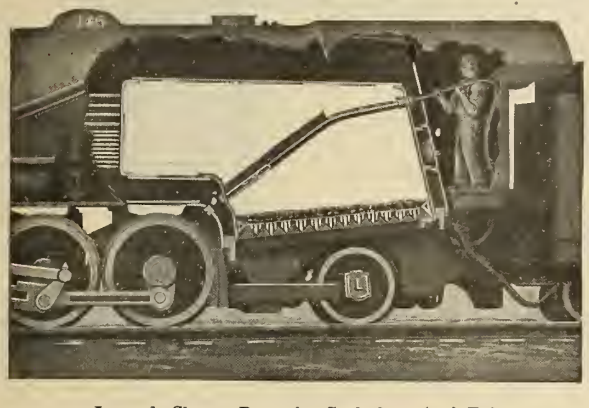

Lagonda Cleaner Removing Scale from Arch Tubes.

Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of Locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

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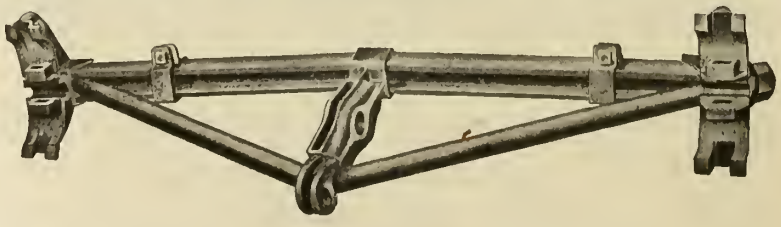

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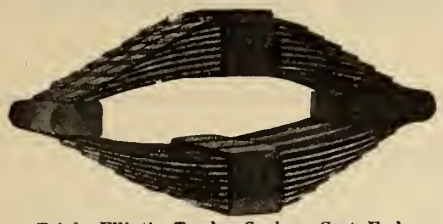

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The Parmelee Pipe Wrench

Price List C

Length Handle	Set No.	Pipe Handled	Set Complete	Extra Handle	Extra Girths	
10 in.	1	⅜, ½, ¾, 1 in.	$5.00	$2.25	⅜, ½, ¾, 1 in.	$ .75
20 in.	2½	¾, 1, 1¼, 1½, 2 in.	7.50	2.50	¾, 1, 1¼ in.	1.00
					1½, 2 in.	1.25
25 in.	3½	1½, 2, 2½, 3 in.	7.50	3.00	1½, 2, 2½, 3 in.	1.25

Prices on larger sizes furnished upon application.

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Designed Especially to handle pipes spaced closely as in coil work. No.2½ wrench illustrated requires but three-quarter inch space between pipes.

Positive Grip instantly taken. Operates without lost motion in stroke of handle. Can be locked or released easily in any position on the pipe.

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Money paid for these Brake Shoes was largely money wasted

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Because these unreinforced brake shoes did not give equivalent service for their cost, having broken in service before their life had barely commenced.

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Use only Reinforced Brake Shoes—then you will get your brake shoe money's worth in long and safe service.

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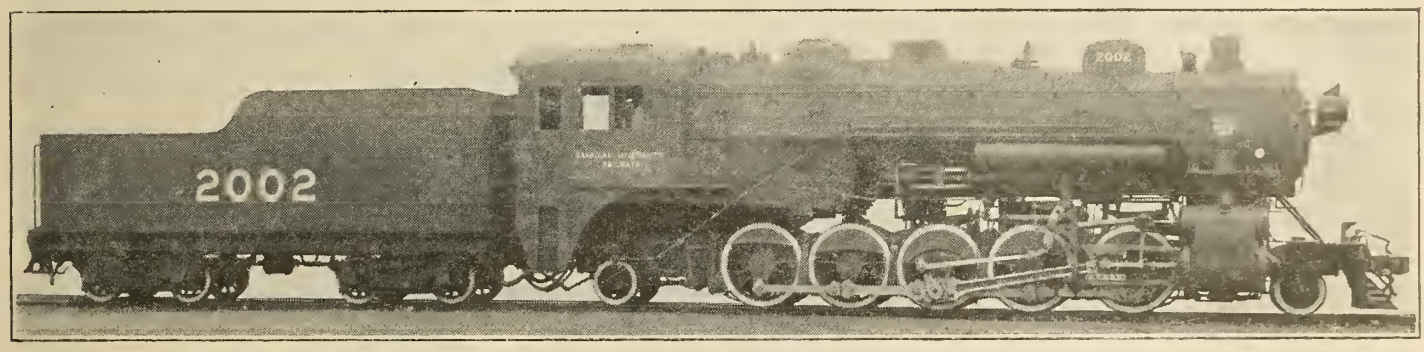
Canadian Railway and Marine World

March, 1917.

2-10-2 Locomotives for Intercolonial Railway.

The Intercolonial Division, Canadian Government Railways, has received recently ten 2-10-2 type locomotives, one of which is illustrated herewith.

As train loads outgrow the capacity of the mikado type, the 2-10-2 type becomes its logical successor in the same way as the mikado type succeeded the consolidation. The 2-10-2 type has formerly been handicapped by its long rigid wheel base. The application of lateral motion driving axles and boxes to the first pair of drivers was made for the purpose of reducing the rigid wheel base to that which is in common use on locomotives of smaller capacity and at the same time securing the advantages of the 10 coupled wheel arrangement, with the resulting increased capacity of the locomotive.



2—10—2 Locomotive, Intercolonial Division, Canadian Government Railways.

The lateral box arrangement consists of two independent driving boxes, whose transverse lateral centres are about on a line with the inside of the main engine frames. These two driving boxes are held in a fixed relation to each other by a bridge or spacing member, which engages the inner flanges of the boxes. The weight which is transmitted through this bridge member is applied to the boxes on their transverse centres. The lugs on the spacing member, which engage the inner flanges of the boxes, are for the sole purpose of maintaining the proper spacing of the boxes, and do not transfer any vertical load. The driving springs are in about the normal position, and are carried upon a cross member, which has a vertical movement only between the engine frames, a wearing shoe being placed upon the inner side of the main frames to prevent side motion. Between this cross member and the bridge or spacing member above mentioned, are interposed 2 inverted rockers, designed so that a lateral force equal to 20% of the vertical weight transmitted is required to deflect them from their normal position. When the boxes are deflected by a side movement of the first pair of driving wheels from their normal centre position, the boxes and the bridge casting are moved laterally in reference to the member carrying the springs. This movement deflects the inverted rockers, which offer a definite resistance against the motion. The spring and equalizer work is not shifted from its normal position when the boxes are deflected laterally. One side of the bridge member is carried down below the driving axle with a bolting flange. This is provided for the attachment of a finger, to guide the brake beam, and ensure that the brake heads register properly with tires on no. 1 driver.

The rod connections between the first and second drivers are arranged with a ball knuckle joint ahead of the pin on no. 2 driver, which allows for lateral deflection of the side rods. The crank pin and rod bearing at no. 1 driver consist of an ordinary design of cylindrical crank pin, on which is placed a hard bronze bushing, the interior being bored cylindrical and the outside turned to a spherical surface. Encasing this bushing are two half pieces of hard steel, which are held in place in a rod end with a wedge, in the same manner as two ordinary half brasses. The bushing can revolve either on the crank pin or within the two steel halves. When the rod is deflected from the normal position, the spherical bushing allows the parts to rotate sidewise around the centre of the front crank pin; at the same time the bushing can revolve on the cylindrical portion of the pin. Several oil holes are provided through the bronze bushing, which ensure lubrication of both the spherical and cylindrical surfaces of the bushing.

The operation of the lateral motion axle should be considered in connection with the engine truck. The driving springs of the first and second axles are equalized in the usual manner to the engine truck; therefore, the weight upon the engine truck centre pin and the lateral motion boxes on the first axle is divided in proportion to the arms of the front equalizer. The engine truck on this engine is of the inverted rocker type, having a resistance of 50% against the initial movement, and, as stated, the resistance of the lateral device at the first driver is 20%. These resistances are so chosen in relation to the weight coming upon each centring device that the lateral resultants at the engine truck and the first driver are just about the same in amount. It will thus be seen that in effect, the engine truck and the first driver act in practically the same way as a 4-wheel engine truck, in guiding the front of the locomotive, except that the lateral resistance is applied in the plane of each wheel, instead of being applied midway between the wheels and divided between them as in the case of a 4-wheel truck. As far as guiding the engine in concerned, therefore, the arrangement is very similar to a 4-wheel truck application with the rear wheel of the truck acting as a driving wheel.

The resistance of the lateral motion box is proportioned with the idea of providing enough initial resistance so that for any ordinary road service on tangent track or road curves, the first driver will remain in normal position and deflect only when passing through turnouts and yard curves. The operation of the device in service has clearly demonstrated the correctness of the design in this particular. A close inspection of the locomotives in operation discloses the fact that the lateral motion first driver very rarely deflects when they are upon the road. When the locomotive passes through sharp turnouts or is operating around yards, the lateral motion driver will deflect, thus preventing the cramping of the driving wheel base in the curve and excess pressure upon the driving wheel flanges.

The action of the rockers provides a limit to the lateral pressure which can be placed upon the first driving wheel flange. When this lateral resistance exceeds 20% of the weight carried upon the lateral motion rockers, the boxes will deflect, the excess lateral pressure being then transferred to the second driver, thus dividing the work of guiding the engine through curves between the truck, first and second drivers, instead of truck and first driver only as in the ordinary 10-coupled arrangement.

Driving boxes for locomotives have generally been designed only for the weight which they are required to support, so that the size has been in direct proportion to the load borne by each journal and driving wheel. This method has been satisfactory so far as the weights are concerned, but unsatisfactory for horizontal forces, resulting in too rapid wear. This is especially true of large locomotives built in recent years, in which it has been necessary to increase, on account of their dimensions, the transverse spacing from centre to centre of cylinders. At the same time the distance apart of the frame centres has been actually decreasing, on account of the necessity of longer bearings and maintaining frames in the centre of the bearings.

The standard gauge of 4 ft. 8½ in. imposes certain limitations on locomotive

construction. Among them is the distance between hubs of driving wheels, and because of this gauge limitation, 55 in. is probably the standard distance between driving wheel hubs at present. Therefore, with driving boxes of increased length in recent high powered locomotives, it has been necessary to decrease the distance between frame centres. This decrease, in combination with the wide cylinder centres, has caused the horizontal forces to increase in greater proportion than the load borne on the journals, so that while the vertical pressure per square inch of bearing surface, due to weight, has been maintained at a fairly constant figure by increasing the diameter and length of the present boxes, yet the bearing pressure due to the horizontal forces has increased in much greater proportion, so that the pressures per square inch due to thees horizontal forces have produced excessive wear on the driving boxes, permitting lost motion to accumulate very rapidly, causing a knock and pound which requires the renewal of the driving box bearings after much less mileage than heretofore.

In order that the driving boxes may wear uniformly, and the journals wear cylindrical and not conical, it is absolutely necessary that the vertical and horizontal forces be applied at the centre of the bearing. The frame centres, therefore, must be made of such spacing transversely so as to coincide with the centre of the boxes. This, however, has the disadvantage of largely increasing the pressures due to the horizontal forces of the driving box. The normal piston thust is very largely increased by the greater lever ratio produced on account of the narrow frame centres and wide cylinder centres, the ration being roughly 2 to 1. This force is still further increased at certain positions of cranks, because of the reaction of the opposite side increasing the normal piston thrust.

The wear of the driving boxes and the pedestal shoes and wedges, with the relatively small bearing surface usually obtained, has been very rapid, and for this reason some efforts have been made to increase this width and to provide more wearing surface by making the legs of the pedestals wider than the body of the frame. The disadvantage of this is that no increase in the length of the box is possible without resorting to lop-sided construction, which experience has shown results in uneven wear of the bearing and conical wear on the journal.

In the long main driving box, the normal width of the frame is increased by bolting on additional pieces for supplementary or auxiliary pedestals on the inside. These may be in the form of separate pieces or combined so as to form a cross brace and at the same time make the additional pedestal for the frame on the opposite side. They are preferably united together at the top and bottom by a cap secured with bolts. The shoes and wedges are increased in width equal to the amount the supplementary pedestals are wide. It is more convenient to retain the spring rigging in its normal central position in the middle of the frame, and for this reason a combination spring saddle has been devised, extending transversely across the engine, by which the spring load is transferred equally to the centre of the box. This arrangement of overhanging integral spring saddle for 2 boxes on one axle can be made in a variety of forms, but the basic principle consists in a rigid member, extending across the engine frames, provided with spring seats on its upper portion for the driving springs, and with means for transferring the load to the centre of the driving box, either by the use of an integral casting having the feet extending down, or by making this in two or more pieces and having the rigid overhanging beams separate and merely bearing on the portion forming the feet.

The idea in this application is the broad principle of a driving box of increased length (probably 50 to 66½%) unequally spaced in relation to the frame and spring rigging, but provided with means for transferring the spring supported load equally to all portions of the driving box and arranged with pedestals of increased width for the shoes and wedges, the frames being retained at about their normal transverse centres.

The increase in the size of locomotives during the past few years has introduced a number of new conditions and problems which the designer has been called upon to consider and for which it has been necessary for him to provide solution. These problems extend to almost all parts of the locomotive, and range from comparatively simple provisions to take care of the increased stresses and loads, to more complex problems resulting from the combination of new factors. One of these problems is the provision of suitable trucks. Many of the conditions of service have changed in the past few years. Limiting clearances have been increased in some extent and the permissible length over all has almost doubled. Very considerable increases in wheel loads have been allowed. Appliances have been devised to develop greatly increased horse power. But the degree of maximum curvature which the locomotive must be designed to pass has, except in rare instances, remained unchanged. Main line curvature has been decreased, but, for the most part, locomotives for all classes of service must be designed to pass certain maximum curves, such as turnouts and crossovers, and this at once imposes limitations and problems in the design of the trucks.

These conditions have led to the development of a lateral motion bolster device, known as the Woodard truck, which, it is claimed, will meet these exacting requirements more fully than the 3 point link suspension which heretofore has been almost universally used. In principle it provides a constant resistance, regardless of the lateral displacement of a bolster, instead of a low initial resistance increasing with the lateral displacement, as is obtained with the 3 point suspension links. Variations, such as high initial resistance, with a constant resistance following a predetermined bolster movement, can be obtained by slight modification of the surfaces in contact. The swing bolster bears directly on the heart shaped rockers, which are connected to it by links to ensure their remaining in the proper position. Service results with this truck are said to show a marked reduction in the flange wear on leading drivers, a steadying action while running on straight track, an absence of jerking motion on curves and withal a better riding locomotive under all track conditions.

The Foulder main rod back end deserves special mention. With this solid end, 4 bolts have been eliminated, the stub has been shortened, and a saving in weight was obtained which also saves in the counterbalance. Only one pattern is required for the bearings, as the same brass is used front and back of pin, the taper being on the two adjustable wedges. The heavy wedge, immediately in front of the bearing, extending to the full depth of the rod opening, and being of greater depth than the bearing itself, provides a fine support for the brass and prevents it from cocking or becoming distorted. Other features of this solid end are its simplicity and the time saved in taking it o ffthe engine, and there are no bolts to renew or holes to ream.

An interesting feature is the combination of the Gaines combustion chamber and the Security brick arch. With this arrangement it is claimed that a very complete deflection of the gases is secured, whereby better combustion is obtained and the back end of the firebox more fully utilized, with a resulting increase in the generation of steam. This arrangement, it is claimed, also gives an increased firebox volume and also tends to improve combustion. In addition, all the usual disadvantages of a shallow throat sheet are eliminated. This combustion chamber, it is claimed, also allows the added advantage of a short tube length and large diameter of boiler. A short tube length not only gives greater evaporative value per square foot of heating surface, but also reduces back pressure, and consequently increases the power of the engine. A large diameter, combined with short tube length, gives a large volume of water where the evaporative value is highest. This large volume of water is ready to flash into steam and therefore increases the reserve supply of steam.

These engines have a short distance from the rear wheel to the draw bar. This not only makes them ride easier on curves, but it also reduces the friction between flange of wheel and rail, which increases the draw bar pull.

These locomotives were built by the American Locomotive Co. at its Brooks works, Dunkirk, N.Y. Their general dimensions are as follows:

Cylinder, type, piston valve, diam. 26 in., stroke 32 in.
Tractive power, simple, 64500.
Factor of adhesion, simple, 3.96.
Wheel base, driving 20½ ft., rigid 15 ft., total 37 ft. 10 in.
Wheel base total, engine and tender, 70 ft. 2¾ in.
Weight in working order, 320,000 lb., on drivers, 256,000 lb.
Weight on trailer 31,000 lb., on engine truck 33,000 lb.
Weight engine and tender 512,200 lb.
Boiler type, extended wagon top, c.d. first ring 79-9/16 in.
Boiler, working pressure, 200 lb.
Firebox, type, wide; length, 144⅛ in., width 84¼ in.
Firebox, thickness of crown ⅜ in., tube ½ in., side ⅜ in., back ⅜ in.
Firebox, water space, front 5½ in., sides 5in., back 5 in.
Firebox, depth (top of grate to centre of lowest tube) 14 in.
Crown staying, radial.
Tubes, material, charcoal iron, no. 270, diam. 2 in.
Flues, material, cold drawn seamless steel, no. 43, diam. 5⅜ in.
Tube, length, 17 ft. spacing 13/16 in.
Heating surface, tubes and flues, 3,413 sq. ft.
Heating surface, firebox, 245 sq. ft.
Heating surface, arch tubes, 41 sq. ft.
Heating surface, total, 3,699 sq. ft.
Superheater surfnce, 850 sq. ft.
Grate area, 66.7 sq. ft.
Wheels, driv. diam., outside tire, 57 in., centre diam., 50 in.
Wheels, driv., material, cast steel.
Wheels, engine truck, diam., 31 in., kind, cast iron spoke.
Wheels, trailing truck, diam., 31 in., kind, cast iron spoke.
Wheels, tender truck, diam., 34 in., kind, cast iron spoke.
Axles, driv. journals, main, 11½ x 22 in., front, 10 x 20 in., other, 10 x 12 in.
Axles, engine truck journals, 7 x 12 in.
Axles, trailing truck journals, 7 x 12 in.
Axles, tender truck journals, 6 x 11 in.
Boxes, driving, cast steel.
Brake, driver, American.
Brake, tender, Westinghouse, air signal, Westinghouse.
Brake, pump, 1 8½ in. C.C., reservoir, 1 18½ x 120 in., 1 22½ x 72 in., 1 26½ x 42 in.

Engine truck, Woodard.
Trailing truck, Woodard.
Exhaust pipe, single, nozzles, 5¾ in., 5⅞ in., 6 in.
Grate, style, rocking.
Piston rod diam, 4½ in., piston packing, snap rings.
Smoke stack, diam., 17 in., top above rail 15 ft. 2 5/16 in.
Whistle, top above rail, 15 ft. 2½ in.
Tender frame, channel.
Tank, style, water bottom.
Tank, capacity, 10,000 gal.
Tank, capacity, fuel, 17 tons.
Valves, type, 14 in., piston travel, 6½ in., steam lap 1 1/16 in.
Valves, setting, lead, ⅛ in.

Wireless Telegraph Communication With Trains.

In connection with the elaborate tests which have been conducted by some railways in America and the progress made in the development of wireless telgraphy in so far as communication with running trains is concerned, it is claimed that the first experiment made by any railway in America, and probably the world, to demonstrate the possibility of wireless communication with a fast running train was on the G.T.R. on Oct. 13, 1902. The experiment was made under the direction of E. Rutherford, F.R.S.C. (now Sir Ernest), and H. T. Barnes, F.R.S.C., then both of the MacDonald Physical Laboratory of McGill University, Montreal.

The following account of the experiment is taken from Mr. Barnes' report: "During the passage of the special train on the G.T.R. between Toronto and Montreal, bearing the American Association of General Passenger and Ticket Agents from Chicago to Portland, it was demonstrated that communication could be maintained between a station and a fast moving train by means of electric waves. No attempt was made to cover distances comparable in size to those attained by Marconi and others, but with comparatively simple laboratory apparatus it was possible to keep the train in touch with the station for from 8 to 10 miles. St. Dominique was selected as the transmitting station, where two large metal plate vibrators 10 x 12 ft., connected with an induction coil of the usual pattern, were situated. On the train the waves were received by collecting wires connected to a coherer of nickel and silver powder. The relay operated electric bells in three cars. The collecting wires were run through the guides for the train signal cord, and extended on both sides of the coherer for about a car length. To obtain the maximum effect it would have been better to have had a long vertical wire, but since such was impossible, the horizontal wire was used. Although these were placed inside the steel frame cars, strong and definite signals were obtained over the distance named. Another difficulty militated against obtaining the maximum sensitiveness, as, owing to the natural vibration of the train resulting from its great speed, it was impossible to have the relay adjusted to its most sensitive point. In spite of these difficulties, the distance to which signals could be sent to the train was eminently satisfactory, and with more refined apparatus greater distances could without doubt be obtained. The success of this form of wireless telegraphy, of which this was but a pioneer experiment, opens up yet another method of providing for the safety of the travelling public.

The Paris, Lyons & Mediterranean Ry. is reported to have ordered 100 locomotives from the Baldwin Locomotive Works.

Birthdays of Transportation Men in March.

Many happy returns of the day to:—

W. G. Annable, General Passenger Agent, Canadian Pacific Ocean Services, Ltd., Montreal, born at Ottawa, Mar. 3, 1875.

John Archibald, Locomotive Foreman, C.P.R., Coquitlam, B.C., born at Edinburgh, Scotland, Mar. 13, 1872.

Jas. Balkwill, Division Superintendent, Canadian Division, Michigan Central Rd., St. Thomas, Ont., born in Southwold Tp., Ont., Mar. 8, 1870.

George Bury, Vice President, C.P.R., Montreal, born there, Mar. 6, 1866.

Allan Cameron, Superintendent, Land Branch, Department of Natural Resources, C.P.R., Calgary, Alta., born near Owen Sound, Ont., Mar. 14, 1864.

H. S. Carmichael, Passenger and Freight Manager, Canadian Pacific Ocean Services, Ltd., London, Eng., born at Glasgow, Scotland, Mar. 7, 1874.

F. G. J. Comeau, District Freight Agent, C.P.R., Halifax, N.S., born at Meteghan River, N.S., Mar. 10, 1859.

W. A. Cooper, Manager, Sleeping, Dining and Parlor Cars and News Service, C.P.R., Montreal, born there, Mar. 22, 1871.

A. E. Cox, General Storekeeper, Canadian Northern Ry., Winnipeg, born at Huddersfield, Eng., Mar. 12, 1863.

Hon. N. Curry, President, Canadian Car & Foundry Co., Montreal, born in King's County, N.S., Mar. 26, 1851.

C. T. Delamere, acting Engineer of Construction, Eastern Lines, C.P.R., Montreal, born at Brainerd, Minn., Mar. 18, 1881.

H. G. Dring, General Passenger Agent, C.P.R., London, Eng., born at Easton, Northamptonshire, Eng., Mar. 8, 1881.

Patrick Dubee, Secretary-Treasurer, Montreal Tramways Co., Montreal, born there, Mar. 4, 1876.

Frederick Elliott, President, Victoria Navigation Co., Ltd., Thurso, Que., born at Montreal, Mar. 8, 1858.

W. R. Fitzmaurice, Superintendent, District 2, Intercolonial Division, Canadian Government Railways, Campbellton, N.B., born at Bedford, N.S., Mar. 19, 1870.

C. Forrester, Superintendent, London Division, Ontario Lines, G.T.R., London, born at Wanstead, Ont., Mar. 5, 1876.

Jas. D. Fraser, Director and Secretary Treasurer, Ottawa Electric Ry., Ottawa, Ont., and President, Canadian Electric Railway Association, born at St. Andrews, Que., Mar. 26, 1851.

R. A. Gamble, General Yardmaster, Winnipeg Terminals, C.P.R., born at Dublin, Ireland, Mar. 1, 1876.

E. P. Goodwin, ex-Inspecting Engineer, National Transcontinental Ry., Baie Verte, N.B., born there, Mar. 17, 1865.

J. Halstead, Division Freight Agent, C.P.R., Calgary, Alta., born at Bracebridge, Ont., Mar. 2, 1877.

R. M. Hannaford, M.Can.Soc.C.E., Assistant Chief Engineer, Montreal Tramways Co., Montreal, born there, Mar. 22, 1865.

C. A. Hayes, General Traffic Manager, Canadian Government Railways, Moncton, N.B., born at West Springfield, Mass., Mar. 10, 1865.

H. T. Hazen, M.Can.Soc.C.E., Chief Engineer, Toronto Suburban Ry., Toronto, born at Truro, N.S., Mar. 14, 1870.

Joseph Hobson, M.Can.Soc.C.E., Consulting Engineer, G.T.R., Hamilton, Ont., born at Guelph, Ont., Mar., 1834.

J. I. Hobson, Treasurer, Canada Steamship Lines, Ltd., Montreal, born at Guelph, Ont., Mar. 30, 1872.

N. J. Holden, President, The Holden Co., Ltd., Montreal, born at Nobleton, Ont., Mar. 22, 1866.

A. R. Holtby, Master of Bridges and Buildings, Mountain Division, Grand Trunk Pacific Ry., Prince Rupert, B.C., born at Rawdon, Que., Mar. 23, 1859.

Frank Lee, M.Can.Soc.C.E., Principal Assistant Engineer, C.P.R., Winnipeg, born at Chicago, Ill., Mar. 7, 1873.

R. W. Long, Division Freight Agent, G.T.R., Hamilton, Ont., born at Appin, Ont., Mar. 20, 1873.

J. M. McKay, Superintendent, Saskatoon Division, Saskatchewan District, C.P.R., Saskatoon, born at Tiverton, Ont., Mar. 13, 1868.

Owen McKay, M.Can.Soc.C.E., Chief Engineer, Essex Terminal Ry., Walkerville, Ont., born in Ross Tp., Renfrew Co., Ont., Mar. 13, 1848.

Col. H. H. McLean. K.C., M.P., President, St. John Ry., St. John, N.B., born at Fredericton, N.B., Mar. 22, 1855.

M. Magiff, Superintendent of Car Service and Telegraphs, Central Vermont Ry., St. Albans, Vt., born at Planks Point, N.Y., Mar. 24, 1852.

Sir Donald D. Mann, Vice President, Mackenzie, Mann & Co., Ltd., and Vice President, Canadian Northern Ry., Toronto, born at Acton, Ont., Mar. 23, 1853.

H. H. Melanson, General Passenger Agent, Canadian Government Railways, Moncton, N.B., born at Scadouc, N.B., Mar. 9, 1872.

T. Milne, Locomotive Foreman, C.P.R., Windsor, Ont., born at Arbroath, Scotland, Mar. 3, 1856.

J. V. Murphy, General Agent, C.P.R., Portland, Ore., born at Bowmanville, Ont., Mar. 5, 1885.

Peter Paton, Purchasing Agent, Canada Steamship Lines, Ltd., Montreal, born at New Lovell, Ont., Mar. 13, 1869.

F. W. Peters, General Superintendent, British Columbia District, C.P.R., Vancouver, born at St. John, N.B., Mar. 25, 1860.

J. W. Pugsley, Secretary, Department of Railways and Canals, Ottawa, Ont., born at Amherst, N.S., Mar. 12, 1861.

C. J. Smith, Manager and Secretary, Montreal Warehousing Co., Montreal, born at Hamilton, Ont., Mar. 10, 1862.

W. Y. Soper, Vice President, Ottawa Electric Ry. Co., Ottawa, Ont., born at Oldtown, Me., Mar. 9, 1854.

E. F. L. Sturdee, General Agent, Passenger Department, C.P.R., Boston, Mass., born at St. John, N.B., Mar. 29, 1876.

A. A. Tisdale, Assistant to Vice President and General Manager, and Purchasing Agent, Grand Trunk Pacific Ry., Winnipeg, born at Mount Vernon, Ont., Mar. 8, 1874.

G. W. Vaux, General Agent, Passenger Department, Union Pacific Rd., Chicago, born at Montreal, Mar. 21, 1866.

A. D. Watt, District Locomotive Foreman, Grand Trunk Pacific Ry., Prince Rupert, B.C., born at St. Louis, Que., Mar. 5, 1874.

A. T. Weldon, Assistant General Freight Agent, Canadian Government Railways, Moncton, N.B., born at Dorchester, N.B., Mar. 6, 1876.

D. O. Wood, Asistant Export and Import Agent, C.P.R., Toronto, born at Kleinburg, Ont., Mar. 16, 1864.

R. Wright, Division Agent, Ontario Lines, G.T.R., Toronto, born at London, Ont., Mar. 15, 1885.

H. K. York, Car Foreman, C.P.R., North Transcona, Man., born at Victoria Corner, Carleton Co., N.B., Mar. 20, 1881.

Railway Mechanical Methods and Devices.

Machining Bell, Stand and Hanger.

An interesting set of jigs for machining the component parts of a locomotive bell and supporting frame is in use in the G.T.R. shops at Stratford, Ont. The jig for machining the bell is shown in Fig. 1. It consists of a shank, a, carrying a casting, b, the outer face of which conforms closely to that of the interior of the bell at its larger end. To the opposite end of the shank, a, there is a small stem, c, the whole jig revolving on centres in a and c. A collar, d, makes a sliding fit on a, and is forced along the latter by the nut, e, a short stretch of the shank, a, being threaded to receive it. The left side of the collar, d, fits into the recessed body of b, and is tapered, four pins, f, in body, b, bearing radially against this taper.

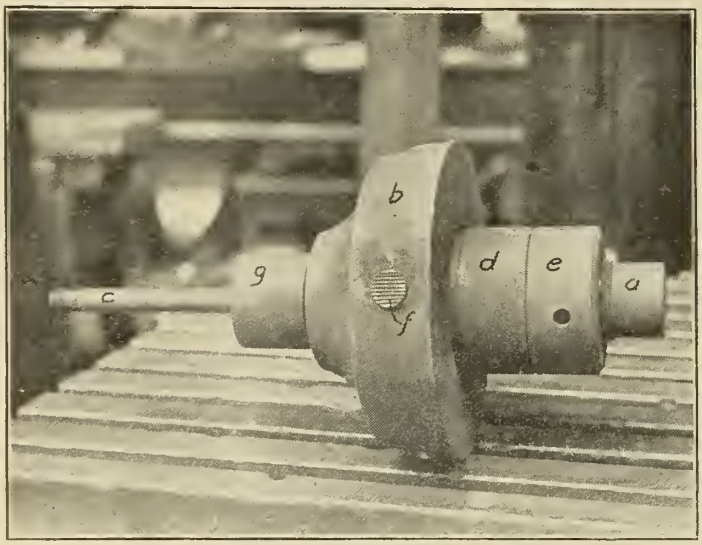


Fig. 1. Jig for Turning Locomotive Bells.

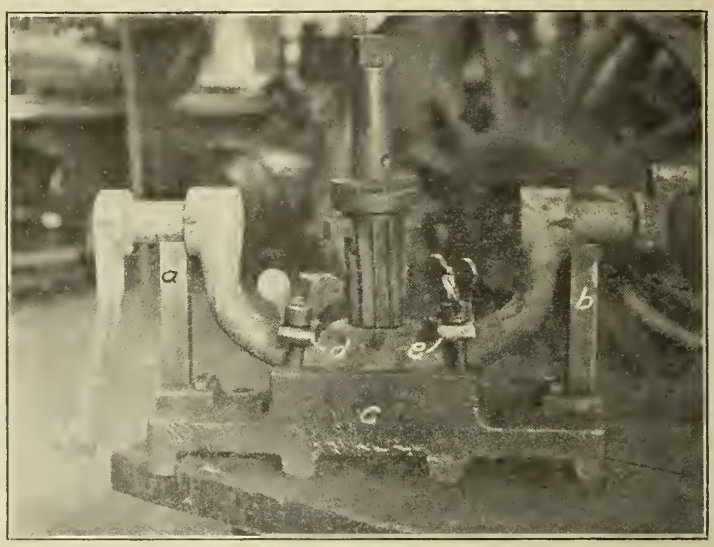


Fig. 2. First Drilling Operation in Bell Hanger Boss.

The hole for the suspending bolt for the bell is first drilled, and this jig is slipped inside, the spindle, c, passing through the bolt hole. The collar, g, bears up against the inner top of the bell, and the whole is clamped by a nut on the end of the spindle, c. The collar, d, is forced to the left of the nut, e, forcing out the pins, f, against the inner face of the bell, securing it solidly for turning, which is performed by swinging the bell between the two jig centres in the lathe.

The bell hanger, which is shown in fig. 2, is first centred, and the journals at either end turned down to size. It is then placed in the jig shown, the turned journals resting on the supports, a and b. The hanger shown has not had the journals turned, and has only been placed in the jig to show the operation. The base of the jig, c, is recessed to receive the hanger boss, which is rough cored. The casting is held in place by two clips, d and e, each of which have two wing nuts.

For boring the cored hole, a tapered reamer of the form shown is used at the top of which there is a facing cutter. The reamer is forced down through the cored hole, and seemingly performs the work satisfactorily without initial drilling out to remove the sand and rough skin. The centre of the base, c, is drilled larger than the reamer, to let the latter pass down to the proper depth.

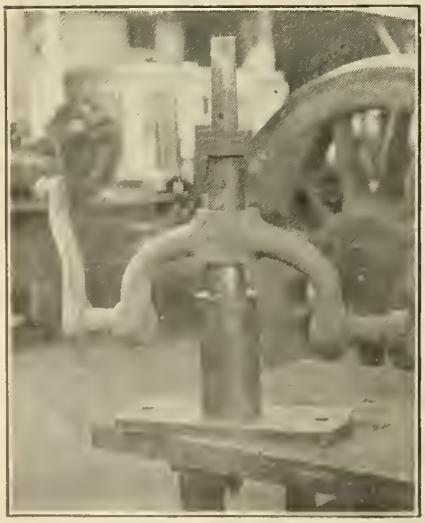


Fig. 3. Final Operation on Bell Hanger Boss.

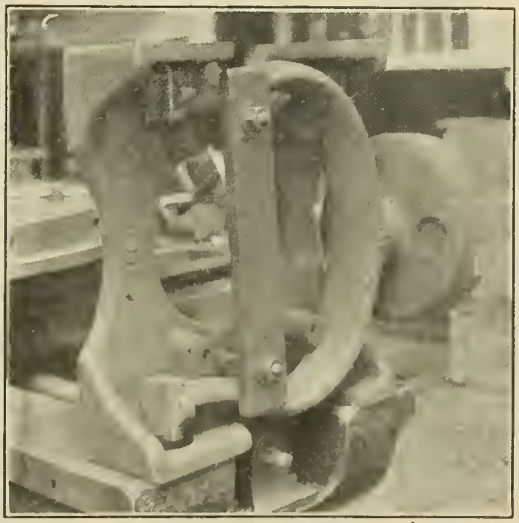


Fig. 4. Drilling Bearings in Bell Frame.

The hanger is then removed to the jig shown in fig. 3, and placed thereon the other way up. This jig consists of a base with a vertical pin, the upper end of which is turned to the taper reamed out in the last operation. This holds the hanger true to the machined surfaces, and a facing reamer forced down on top, to face off the other face of the boss, completing the bell hanger machining.

The bell frame is first taken to the planer, and the faces for the bearing caps planed and the bolt holes drilled. The caps, similarly planed, are bolted in place, and the frame removed to the jig shown in fig. 4, which is used in the drill press. The frame shown in the jig has not had the caps applied and is only placed in position to show the operation. The jig consists of box shaped castings finished on the top and bottom faces, and with bosses on the inside so located as to fit the frame as shown, the frame being clamped in place by a clamp plate and two bolts. In both top and bottom finished faces there is a hole, somewhat larger than that of the hole for the bearing, but in line with the latter. A drill bushing fits in either of these holes. In the upper hole the drill bushing is dropped and the upper hole drilled. The bushing is then removed and the whole jig turned upside down, the bushing placed in the other whole jig whole and drilling operation repeated.

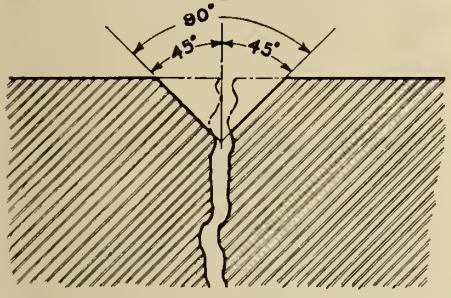
Babbiting Driving Wheel Faces.

A handy device was evolved in the G.T.P.R. shops at Prince Rupert, B.C., some little time ago by G. Carpenter, who was the Locomotive Foreman there, for the babbiting of the faces of driving wheels, and thus avoiding the necessity of placing them in a lathe for turning up, which makes the arrangement of particular use in small shops and roundhouses where a lathe of sufficient capacity is not always on hand. A circular disc about 15 in. diam., made of ⅝ in. boiler plate, turned to ½ in. on one side so that the turned face is perfectly true, is divided into two parts to fit around the axle. The two parts are bolted together with two plates of the same material, 3 x 5 in., which are fastened solid to one half of the disc, so that it is held rigid. The disc has a circular groove 3/16 in. deep and ⅝ in. wide cut in the finished face about an inch from the outside edge, into which may be fitted split rings of different thicknesses according to the amount of metal desired on the wheel. The rings differ in thickness by ⅛ in., and the more metal it is

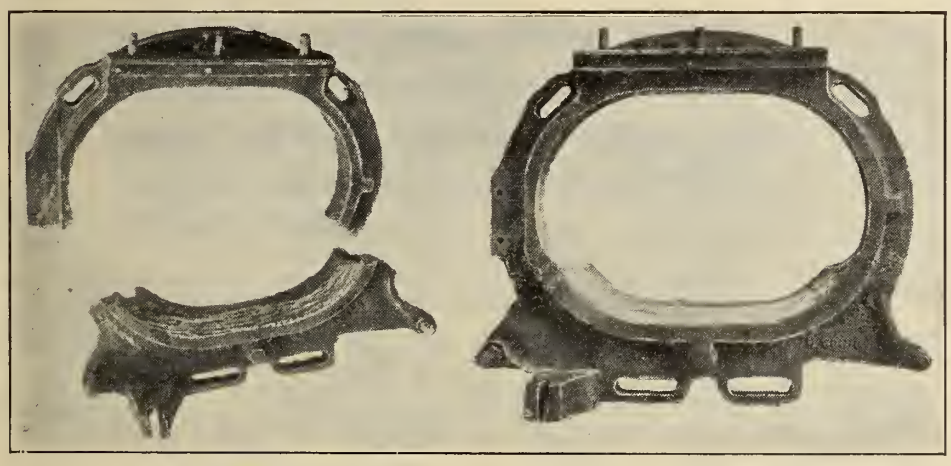
desired to mould on to the wheel, the thicker the ring to be fitted into the groove. The disc is attached to the wheel by clamps around the spokes and drawn up tight to the face, when the babbit is poured through a lipped hole ½ in. diam. at the top.

Welding Fire Hole Door Frame.

The accompanying illustrations from photographs show a pneumatic fire door frame before and after the welding at G.T.R. shops, Point St. Charles, Montreal. The edges of the broken parts were first chamfered to an angle of 45 degrees, as



shown in the accompanying sketch, the metal adjacent to them was cleaned, and then set up in a position to weld. The whole frame was then preheated in a charcoal fire until it assumed a cherry red heat all over; it was then ready to weld,



Fire Door Frame Before Welding.

Fire Door Frame After Welding.

which was done by two operators, one man on each side of the frame. As soon as the welding was finished, the casting was covered, with charcoal ashes, and allowed to cool as slowly as possible, as when cooled off this way the casting does not shrink and is easily machined. The cost of making this weld was as follows:

1 man chipping and setting up; 1 hr.	40c	$0.44
2 men welding; 40 mins. at 40c. an hr.	54c	1.58
72 cu. ft. acetylene gas at $2.75 per 450 cu. ft.		.44
90 cu. ft. oxygen gas at $1.75 per 100 cu. ft.		1.58
Iron, flux and charcoal		.65
	94c	$2.67
		.94
Total		$3.61

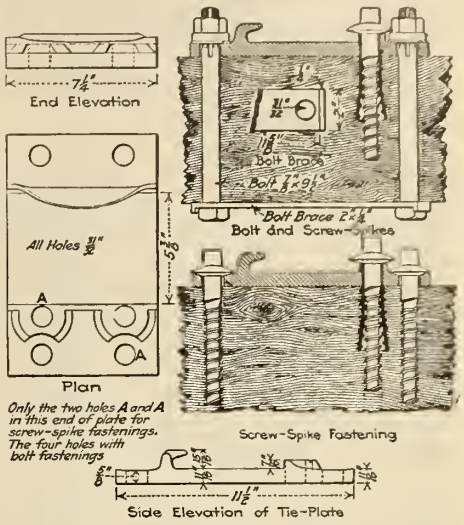
Rack for Holding Triple Valves.

As an instance of the value of matter published in Canadian Railway and Marine World, under "Railway Mechanical Methods and Devices," may be mentioned an article in the October issue describing a rack for holding triple valves built in the C.P.R. passenger car shop, air brake department, at Vancouver, which was furnished by T. Spence, General Car Foreman there. This attracted the attention of N. Marple, General Car Foreman, Michigan Central Rd., St. Thomas, Ont., who advises us that as a result of the publication of the article a similar rack has been built in the St. Thomas shops.

Experimental Rail Fastenings.

The use of hooked tie plates with screw spike and through bolt fastenings is being tried on the Delaware, Lackawanna & Western Rd. as a development in track for heavy traffic. The two types of construction are laid on certain test pieces of track, and are shown in the accompanying drawing. The tie plate has a shoulder on each side of the rail seat, and one of these shoulders is formed as a hook or lip to engage the edge of the rail base. The plate is laid with this hook on the inner or gauge side of the rail. With spike fastenings, each plate is held to the tie by screw spikes, and the rail is held by one drive spike ⅛x6 in. on the outer side. With bolt fastenings, each plate is secured to the tie by two ⅞ in. through bolts (at diagonally opposite corners), the heads being beneath the tie and prevented from turning by means of a channel shaped washer or brace which engages both bolts. The rail is held on the inner side by the hook of the tie plate and on the outer side by the head of a screw spike. This screw spike is held in the tie by means of a Tenax split sleeve. Bolt fastenings for rails and rail chairs have been used for many years in Europe, and this present design of through bolt fastenings for tie plates has been developed by A. J. Neafie, Principal Assistant Engineer of the railway, who has great hopes for its use in permanent construction. He believes that as railways are now using treated ties and expensive tie plates under heavy traffic, especially on curves, they can well afford to go into the question of bolted fastenings. This should be an ideal construction also for subways and tunnels, where it is difficult to apply new material in maintenance work. The modern construction consists of treated materials, heavy tie plates, screw spikes, etc., which material should have a minimum life of at least 14 years, according to Mr. Neafie's estimate. He considers that the question of applying bolts is not a serious one, and they need be applied only in new work and renewals.

One serious condition in track is that of corrosion of rails and metal fastenings, and prior to the design of this bolted construction the engineering department had gone into the matter carefully, spraying the fittings with oil once or more per year if necessary in order to prevent any trouble from corrosion. On the test loca-



Experimental Track with Hooked Tie Plates and Bolt and Screw-Spike Fastenings.

tion of the new fastenings, all bolts have been greased and the bolt holes filled with grease. The bolts are fitted with special nut locks, each of which represents a compression of 2,000 lb., making a total compression of 8,000 lb. on the tie plate, and thereby reducing the mechanical wear that takes place when tie plates are loose on the ties. It is believed that fastenings of this type will be adopted on heavy permanent track construction.

The hook shoulder tie plate with screw spike rail fastenings has not developed any great amount of noise due to contact between the rail and hook. The tie plates fit the rail base very tightly, but there is no wedging of the rail under the hook. Even where there is a loose fit between the tie plate and base of rail there is no apparent rattling or noise.

American Wood Preservers' Association.—Following are the officers for the current year, elected at the recent annual convention at New York: John Foley, Pennsylvania Rd., Philadelphia, Pa., President; M. K. Trumbull, Kansas City, Mo., First Vice President; J. B. Card, Chicago, Ill., Second Vice President; F. J. Angier, Baltimore and Ohio Rd., Baltimore, Md., Secretary-Treasurer; V. K. Hendricks, C. M. Taylor, members of the executive committee. It was decided to hold the next meeting in Chicago.

Passenger Shelters at Double Track Stations.—The Board of Railway Commissioners has before it for consideration the matter of requiring railway companies to provide a shelter opposite a passenger station at busy points where trains may be going in opposite directions on different tracks at the same time, and has asked the railway companies to submit their views. The matter was brought to the board's attention by a resident of Perth, Ont., where there are six passenger trains each way daily.

House of Commons Committees.—The following have been elected chairmen of the committees named: Railways, R. Blain, M.P. for Peel, Ont.; Marine and Fisheries, C. Jameson, M.P. for Digby, N.S.; Forests and Waterways, G. Brabazon, M.P. for Pontiac, Que.

Cross-Ties Bought by Railways in 1915.

This information is based on reports received from 44 steam railways and 27 electric railways purchasing ties in 1915.

A total of 7,592,530 cross-ties was purchased valued at $3,329,029. Of this more than 66%, or 11,811,116, as compared with 1914.

The number of cross-ties imported in 1915 was 1,219,594 valued at $749,407. About half of these were composed of

Cross-Ties Purchased, 1914 and 1915, by Kinds of Wood.

Kind of Wood.	1914. Number.	Value.	Av. Val.	Per Cent.	1915. Number.	Value.	Av. Val.	Per Cent.
		$	$ cts.			$	$ cts.	
Total	19,403,646	8,664,914	0.45	100.0	7,592,530	3,329,029	0.44	100.0
Jack pine	8,379,064	3,624.151	0.43	43.2	2,463,999	986,139	0.40	32.4
Eastern cedar	2,651,319	1,279,100	0.48	13.7	1,957,149	901,623	0.46	25.8
Hemlock	1,390,885	576,440	0.41	7.2	844,160	336,223	0.40	11.1
Tamarack	1,507,902	661,717	0.44	7.8	628,897	228,317	0.36	8.3
Eastern spruce	1,020,667	379,841	0.37	5.2	508,321	138,287	0.27	6.7
Douglas fir	1,456,388	539,249	0.37	7.5	402,020	156,917	0.39	5.3
Oak	617,449	483,496	0.78	3.2	328,120	235,306	0.72	4.3
Birch	11,018	5,293	0.48	*	189,153	187,572	0.99	2.5
Hard pine	378,983	263,215	0.69	1.9	96,637	66,765	0.69	1.3
Chestnut	104,980	69,091	0.66	0.5	53,924	26,898	0.50	0.7
Maple	22,449	19,995	0.89	0.1	42,915	29,195	0.68	0.6
Elm	33,307	27,030	0.81	0.2	21,178	9,735	0.46	0.3
Western cedar	13,817	4,554	0.33	0.1	14,129	5,063	0.36	0.2
Sycamore					13,195	6,209	0.47	0.2
Gum					13,195	6,209	0.47	0.2
Beech	32,637	25,331	0.78	0.2	12,388	7,776	0.63	0.1
Red pine	81,979	30,923	0.38	0.4	2,000	500	0.25	*
Western spruce	547,919	202,234	0.37	2.8	1,086	269	0.25	*
Ash	106	46	0.43	*	64	26	0.41	*
Western larch	1,121,347	459,643	0.41	5.8				
White pine	14,165	6,446	0.46	0.1				
Cypress	13,246	5,873	0.44	0.1				
Western hemlock	4,019	1,246	0.31	*				

*Less than one-tenth of 1 per cent.

Cross-Ties Purchased, 1914 and 1915, by Steam Railways, by Kinds of Wood.

Kind of Wood.	1914. Number.	Value.	Av. Val.	Per Cent.	1915. Number.	Value.	Av. Val.	Per Cent.
		$	$ cts.			$	$ cts.	
Total	19,196,208	8,545,057	0.45	100.0	7,399,753	3,229,000	0.44	100.0
Jack pine	8,355,518	3,610,885	0.43	43.5	2,462,733	985,706	0.40	33.3
Eastern cedar	2,574,920	1,232,925	0.48	13.4	1,864,398	856,584	0.46	25.2
Hemlock	1,369,376	566,502	0.41	7.1	776,586	300,335	0.39	10.5
Tamarack	1,478,512	646,674	0.44	7.7	619,923	224,331	0.36	8.4
Eastern spruce	1,019,249	378,989	0.37	5.3	508,321	138,287	0.27	6.9
Douglas fir	1,452,238	537,374	0.37	7.6	393,097	152,902	0.39	5.3
Oak	602,291	469,828	0.78	3.1	315,907	225,284	0.71	4.3
Birch	11,018	5,293	0.48	0.1	189,153	187,572	0.99	2.5
Hard pine	356,473	250,614	0.70	1.9	95,783	66,238	0.69	1.3
Chestnut	104,980	69,091	0.66	0.5	53,802	26,819	0.50	0.7
Maple	22,449	19,995	0.89	0.1	42,915	29,195	0.68	0.6
Elm	28,973	24,627	0.85	0.2	21,078	9,695	0.46	0.3
Western cedar	12,609	4,035	0.32	0.1	14,129	5,063	0.36	0.2
Sycamore					13,195	6,209	0.47	0.2
Gum					13,195	6,209	0.47	0.2
Beech	32,637	25,331	0.78	0.2	12,388	7,776	0.63	0.1
Red pine	81,979	30,923	0.38	0.4	2,000	500	0.25	*
Western spruce	547,919	202,234	0.37	2.9	1,086	269	0.25	*
Ash	106	46	0.43	*	64	26	0.41	*
Western larch	1,121,347	459,643	0.41	5.8				
White pine	14,165	6,446	0.46	0.1				
Cypress	5,430	2,356	0.43	*				
Western hemlock	4,019	1,246	0.31	*				

*Less than one-tenth of 1 per cent.

Cross-Ties Purchased, 1914 and 1915, by Electric Railways, by Kinds of Wood.

Kind of Wood.	1914. Number.	Value.	Av. Val.	Per Cent.	1915. Number.	Value.	Av. Val.	Per Cent.
		$	$ cts.			$	$ cts.	
Total	207,438	119,857	0.58	100.00	192,777	100,029	0.52	100.0
Eastern cedar	76,399	46,175	0.60	36.8	92,751	45,039	0.49	48.1
Hemlock	21,509	9,538	0.46	10.4	67,574	35,888	0.53	35.1
Oak	15,158	13,668	0.90	7.3	12,213	10,022	0.82	6.3
Tamarack	29,390	15,043	0.51	14.2	8,974	3,986	0.44	4.7
Douglas fir	4,150	1,875	0.45	2.0	8,923	4.015	0.45	4.6
Jack pine	23,546	13,266	0.56	11.3	1,266	433	0.34	0.7
Hard pine	22,510	12,601	0.56	10.8	854	527	0.69	0.4
Chestnut					122	79	0.65	0.1
Elm	4,334	2,403	0.55	2.1	100	40	0.40	*
Cypress	7,816	3,517	0.45	3.8				
Eastern spruce	1,418	852	0.60	0.7				
Western cedar	1,208	519	0.43	0.6				

*Less than one-tenth of 1 per cent.

total 318,991 were treated with preservative to withstand decay. This is about 5% of the total, compared with 7% in 1914 and 10% in 1913. The cross-ties purchased in 1915 show a decrease of kinds of wood which are not abundant in Canada, such as oak, hard pine, chestnut, sycamore and gum. Jack pine still heads the list in quantity cut, a place it has held since 1911, when it took the place of white cedar.

The average price paid for cross-ties in 1915 showed a slight decrease as compared with 1914. The average prices in the accompanying tables are based on the cost at the point of purchase, and may or may not include long haul transportation charges. Only in the cases of those woods which are used in large quantities can value given be taken to represent the relative value of the wood.

The electric railways paid an average of 52c each for their ties, compared with 44c by the steam railways. The electric railways purchased 2.5% of the total in 1915, compared with 1.1% in 1914.

The foregoing is from a bulletin prepared by the Interior Department's Forestry Branch, for copy of which we are indebted to R. H. Campbell, Director of Forestry.

Canadian Northern Car Building at Port Mann.

In connection with the C.N.R. shops at Port Mann, B.C., it was decided recently to fit up the main building, which was erected a few years ago, for the construction of wooden frame cars. The lumber from which such cars are usually built is generally obtained from the adjacent territory, and as the freight tonnage from the coast eastward considerably exceeds that going west, the movement of the necessary iron parts from eastern points to Port Mann, involves little or no expense. The construction of cars at the coast also reduces the empty car movement westward by providing for the excess east bound tonnage. Following is a list of the tools ordered, to which, it is possible, that certain additions may be necessary, after the plant is in operation in order to balance the output of various parts. At present the idea is to build as many cars as the machine equipment will produce the parts for:—

Iron working machinery: 1 double head centre drive axle lathe, 1 bulldozer, 1 bulldozer oil furnace, 1 6-spindle multiple drill, 1 36 in. upright drill, belt driven, 1 2 in. forging machine, belt driven, 1 forging machine furnace, 2 triple head screwing machines, belt driven, 1 combined punch and shears, 1 Beaudry hammer, belt driven, 1 no. 9 blower, belt driven.

Wood working machinery: 1 butting saw, 1 mortise and boring machine, 1 horizontal tenon machine, 1 vertical tenon machine, 1 automatic gaining machine, 1 4-spindle boring machine, 1 band saw, tilting table, 1 large rip saw, 1 small rip saw,1 universal saw, 1 6 x 14 sticker, 1 hand jointer, 1 automatic knife grinder, 1 automatic rip and circular saw grinder.

Dominion Government Elevator at Port Arthur.—Contracts are reported to have been awarded to Barnett McQueen Co., for the foundations, revetment work, pile driving and docks, for the Dominion Government grain elevator of 2,000,000 bush. capacity, on the water front at Port Arthur. It is stated that preliminary work, which will cost about $300,000, will be started immediately, and that the superstructure will be taken in hand early in the summer.

Canadian Transfer Co., Ltd.—The board for the current year, elected at the recent annual meeting of shareholders, is as follows: C. Cassils, Hugh Paton, G. R. Starke, Sir H. Montagu Allan and F. W. Morson. F. M. McRobie is General Manager and Secretary.

Grand Trunk Railway Betterments, Etc.

Port Colborne Station, etc.—A new passenger station is being built at Port Colborne, Ont., at the intersection of the Buffalo-Goderich and the Port Colborne-Port Dalhousie lines, the front of the building facing the former as being the more important line of travel. The foundation is of concerte, the elevations are finished in matt faced brick of a moss green color, and the roof covered with grey asbestos shingles. The exterior is dominated by a turret, with a fleche roof placed at the angle of the building over the operator's room and ticket office, so as to command good views along both main lines which cross there at right angles. The eaves of the roof overhang about 6 ft. to provide shelter from the weather. The interior comprises a large general waiting room, 36 x 25 ft., with terazzo floor, the ticket windows being in the northeast corner. Large double doors give ingress and egress from and to brick paved platforms alongside the tracks on the north and east sides. Immediately off the west end of the general waiting room are separate waiting rooms for men and women, each 18½ x 12 ft., with lavatory accommodations. The space immediately to the west of the small waiting rooms is allotted to the handling of baggage and express business, the respective sizes being 25 x 17 ft. and 26 x 25 ft. The entire building is 101 x 27 ft., and will be equipped with heating system and lighted throughout by electricity.

The new freight shed is 30 x 144 ft., and is constructed of heavy timber according to G.T.R. standard plans.

Western Lines.—At Detroit, Mich., during last year the company authorized 38,440 sq. yds. of brick paving on concerte foundation, of which about 25,000 yds. are completed, on team ways adjoining team tracks and freight houses.

A second track is being built on the 27th District, from Milwaukee Jct. to Royal Oak, Mich., 9.19 miles. The work is completed except through the limits of an interlocking plant where the G.T.R. crosses the Detroit Terminal Rd.

A new second track is being built easterly for 7 miles from Milwaukee Jct. The track work is completed and two interlocking plants with other signal work are under construction. Near the easterly end of the second track there is under construction a new receiving, departure and classification yard, which will have a total capacity of 2,040 cars. The grading is practically completed and track work to the extent of 600 cars has been completed.

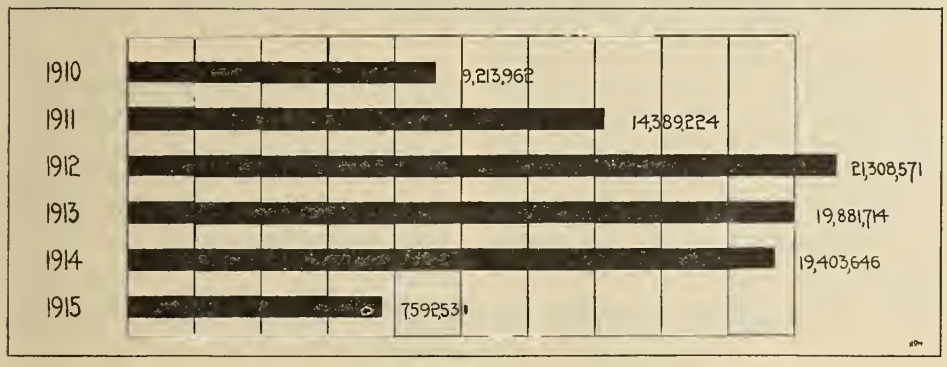
The above mentioned improvements form part of the company's plans for the extension and improvement of the Detroit Terminals, the total estimated expenditure being $824,359.

At Pontiac, Mich., a new classification yard, with capacity for 456 cars, is practically completed. A new second track of 2.8 miles is also being built in the city. This includes the erection of standard double track steel bridges, with concrete abutments and piers, over Lawrence St., Clinton River and Pike St., also a three track standard bridge with concrete abutments and piers over Orchard Lake Ave. All masonry and track work is completed, and the steel work is expected to be completed at an early date.

A new combination passenger and freight station has been built at Kingsbury, Ind.

Dominion Government War Savings Certificates.

The new war savings certificates which have been created by the Dominion Government to encourage thrift and economy, and to give everyone an opportunity to assist in financing the war expenditure, are on sale at every bank and money order post office in Canada. The $25 certificate sells for $21.50, the $50 one for $43, and the $100 one for $86. As an investment the certificates offer many attractive features, chief of which are the absolute security and the excellent interest return. For every $21.50 lent to the government now, $25 will be returned at the end of three years. There are other features which are especially interesting to small investors. The certificates may be surrendered at any time, if the buyer should need his money; each certificate is registered at Ottawa in the buyer's name and, if lost or stolen, is therefore valueless to anyone else. While they are excellent from an investment standpoint, the certificates should appeal strongly to Canadians, because they offer to those who must serve at home a splendid opportunity for a most important patriotic service. The person who honestly saves to the extent of his ability and places his savings at the government's disposal by purchasing these certificates, may feel that he is having a direct share in feeding, equipping and munitioning Canadian soldiers, who are so nobly doing their part.



Cross Ties Bought by Railways in 1915.—See page 88.

Western Dominion Ry.—The Dominion Parliament is being asked to extend the time for the construction of this projected railway from near Cardston, Alta., via Pincher Creek, to the C.P.R. Crowsnest Branch at Lundbreck, thence northerly to Calgary and Edmonton, Alta, and Fort St. John, B.C., with a branch from Pincher Creek to the Old Man River. J. O. Carss, Ottawa, is solicitor for applicants. (Apr., 1915, pg. 137.)

Grand Trunk Pacific Railway Betterments in 1916.

The Grand Trunk Pacific Ry. during 1916 centred its betterment work along its main and branch lines. We are officially advised that 2.88 miles of new track were laid, viz., an extension to Riverhurst, Sask., on the branch running westerly from Moose Jaw, and a large amount of general work was done.

In addition to pulling up 68.9 track miles of fencing at points between mileage 882.2 and 1656.5, the following works were completed on the main line: New storehouse with spur track at Melville, Sask.; 1,000 ft. spur for freight at mileage 389, Sask.; pumping plant at Watrous, Sask., rebuilt; 1,280 ft. track laid to elevator at Wooster, Sask.; elevator track laid at Birtze, Sask.; 444 ft. extension laid to elevator track at Egerton, Alta.; new pumphouse erected at Wainwright, Alta.; 1,502 ft. elevator track laid at Jarrow, Alta.; partition in locomotive house, addition to ice house, a new oil house and an office for employment agent erected at Edmonton, Alta.; loading platform at Duffield, Alta.; pipe line laid for water supply from Nechaco River to Prince George, B.C.; new water supply provided at Bednesti, B.C.; passenger station erected at Nichol, B.C.; loading platform erected and stock yard provided at Vanderhoof, B.C.; passenger station erected at Fort Fraser, B.C.; passenger shelter erected, spur track laid and driveway provided at Skeena Crossing, B.C.; extension to ice house built at Prince Rupert, B. C.

As previously stated, the branch line from Moose Jaw westerly was extended into Riverhurst, Sask., 2.88 miles, where a yard was laid out and the following buildings erected: passenger station, bunk house, freight shed and coaling platform.

On the Prince Albert Branch, which leaves the main line at Young, Sask., the roadbed between mileage 87.5 and Prince Albert, mileage 111.5, was repaired and prepared for track laying. A station building and freight house are being built in Prince Albert. A loading platform has been built at mileage 9.2 from Young; the loading platform at Meacham has been extended; a coal and oil house has been built at Totzke; and at St. Louis, near the present track end, an elevator track has been laid.

On the Biggar-Calgary Branch, at Lydden, mileage 13.4, a passenger station has been built and the loading platform extended; and at Loverna, mileage 104.5, the elevator track has been extended 198 ft.

On the Cutknife Branch a stock yard has been built at Carruthers, Sask., mileage 46.5.

On the Calgary Branch stock yards have been built at Ferintosh, mileage 46.6 from Tofield, and at Delburne, mileage 92.5. At Calgary interchange billing office, storehouse, car inspector's office and scale track have been built.

On the Alberta Coal Branch a commercial spur track, 1,035 ft. long, has been built at mileage 40.

Suggested Aerial Route in Canada.—It is reported that a company may be organized shortly with a capital of $50,000, to operate an aerial service between the main land and Prince Edward Island.

The Madiid, Saragossa & Alicante Ry. and the Northern Ry. of Spain are stated to be negotiating in the U.S. for freight cars, the former for 600 gondola cars, and the latter for 1,500 hopper cars.

Electric Substation for Mount Royal Tunnel.

The Canadian Northern Ry. will have finished at an early date a substation at the Mount Royal tunnel's west portal, near the top of the 0.6% grade, for supplying power to the locomotives for operation on the electrified zone, extending from the terminal station in Montreal to Cartierville. The building is 88 x 70 ft. x 34 ft. high, and consists of a machinery section and a switching and auxiliary section. The machinery room contains two 1,500 k.w. synchronous motor generator sets, with the foundation for a third set, and 3 exciter sets with space for a fourth. It also contains the switchboard. A 25 ton travelling crane is provided in this room to handle the heaviest pieces of machinery. Under this room there is a basement, where rheostats are located beneath the switchboard, and where there are also storage and locker rooms. The switching and auxiliary section is divided from the machinery section by a heavy fire wall. Underneath half of this is a basement containing rooms for oil storage and for the furnace which will heat the building. This section is divided into a busbar room, oil switch room, lightning arrester room, power transformer room, battery room and feeder entry room. Fire walls and doors fully guard against the possibility of any fire spreading. The machinery room has a glazed brick dado extending 10 ft. above the floor. Above this the room is lined with a light cream colored brick. Ample windows are provided for light and ventilation. Revolving ventilators are located in the roof over the machinery. The exterior of the building is finished with a dark red tapestry brick, with parapet, cornice and other trimming of moulded concrete imitating dressed sandstone. Three-phase 60-cycle 11,000-volt power will be delivered at the substation by the Montreal Light, Heat & Power Co., which distributes electric power from 6 water power stations, aggregating 170,000 h.p. All of these are connected to a central distributing station, which is only a short distance from the east end of the tunnel in Montreal. Two sets of cables, one set a spare, will be installed from the central distributing station through the tunnel in ducts and underground all the way to the substation. In addition to these underground lines, an overhead transmission line will connect the power company's Montana St. transformer station, just north of Mount Royal, with the substation. The switches on these incoming lines will be so arranged that the 11,000-volt busbars can be quickly changed from one to the other. Besides the water power generating stations the power company has 2 steam generating stations with a total output of 32,000 h.p. These act as a reserve only, and are connected to the central distributing station by underground feeders. Continuity of power supply is thus amply provided for.

The alternating current power will be converted into 2,400-volt direct current power for the trolley circuits by 1,500-k.w. motor-generator sets. Two of these sets are being installed at present, one of them being a spare. There will be space provided in the station for a third motor-generator set, which will be installed when the load increases beyond the capacity of one set. Each of these sets consist of two 750-k.w., compound wound, commutating pole generators wound for 1,200 volts, insulated for 2,400 volts, and direct connected to an 11,000-volt synchronous motor operating at a speed of 600 r.p.m. These generators are permanently connected in series. The shunt fields are separately excited. The pole face winding, series and commutating filed windings are all connected on the ground side of the generators, so that the armatures are only parts subjected to the full potential of 2,400 volts. Separately exciting the shunt fields would ordinarily be objectionable, for the reason that if the commutator should arc over, due to a short circuit on the line, the generator voltage would tend to hold up and maintain the arc. To overcome this objectionable feature, a limiting resistance is placed in series with each of the shunt fields. This resistance is cut into the circuit by means of a contactor, operated by current coils excited from the 125-volt bus, and connected in series with the auxiliary switch attached to the main direct-current circuit breaker. When this circuit-breaker opens the auxiliary switch will also be opened, thereby allowing the contactor to open and cut in the additional resistance, thus reducing the voltage of the generators. A speed limit device is also used. The contacts of this device are connected in series with the trip coil of the circuit breaker. In case of about 15% over speed, or more, a revolving weight due to centrifugal force will open the switch, thus killing the low voltage release coil of the circuit breaker and causing it to open. These sets will have a continuous capacity of 1,500 k.w. each and an overload capacity of 200% for 5 minutes.

There will be three motor-generator exciter sets, each consisting of a 50-k.w. 125-volt generator of the commutating pole type, direct connected to a 550-volt 1,200 r.p.m. induction motor. Normally one exicted will furnish exciting current to the fields of the synchronous motors, and another the current to excite 4 generators, the third exciter being a spare. Two banks of transformers, one a spare, each consisting of three 100-k.w. 60-cycle 11,000/550-volt single-phase transformers will be installed to furnish low voltage alternating current for operating the exciters and various motors. Other small transformers will step down from 550 volts to 110 volts for lighting the station. Emergency lighting will be taken care of by means of a storage battery, which will also furnish current for operating the oil switches in case of a complete shut down, when current from the exciter will not be available.

The switchboard is composed of 32 panels of natural black slate. These will control various outgoing circuits for signals, tunnel lighting and miscellaneous power, as well as the substation machinery. Nine of these panels comprise the 2,400-volt direct current board. The 2,400-volt circuit breakers and lever switches are mounted on panels, back of and above the main switchboard. They are operated by means of insulated handles on the front of the main board so as to eliminate any possibility of the operator coming in contact with the 2,400-volt circuit. The breakers are enclosed between fireproof barriers. They are equipped with powerful magnetic blowouts to extinguish the arc, and are provided with a resetting device operated from the front of the board. The field switches are mounted back of the panels, with their operating handles on the front of the main board. The complete electrical equipment is being supplied by Canadian General Electric Co., Ltd.

The Canadian Pacific Railway's Honor Roll No. 17.

Adamson, Richard L.	Draughtsman	Strathmore	Wounded
Bland, William G.	Asst. baggage master	Medicine Hat	Killed in action
Buckingham, E. H.	Assistant agent	Claresholm	Wounded
Chapman, Andrew G.	Stower	Winnipeg	Died of wounds
Clarkson, Lorne	Conductor	Calgary	Killed in action
Connors, William P.	Carpenter	Fort William	Died of wounds
Craik, William	Laborer	Ogden Shops	Killed in action
Douney, Thomas E.	Fire inspector	Cranbrook	Wounded
Drybrough, David	Clerk	Vancouver	Died of wounds
Eaton, Judson W.	Trainman	B. C. Dist.	Killed in action
Ferguson, James D.	Comptometer operator	Winnipeg	Killed in action
Fraser, John S.	Stower	Winnipeg	Died of wounds
Grant, Fred C.	Trimmer	Angus	Killed in action
Green, Robert H.	Clerk	Toronto	Gassed and prisoner
Hacking, William S.	Stenographer	Montreal	Wounded
Horwill, William B.	Boilermaker's app.	Ogden Shops	Wounded
Howell, Harry	Miner	Lethbridge	Suffering from shock
Hughson, Henry E.	Wireman	Calgary	Killed in action
Keating, Harold G.	Wiper	Kamloops	Wounded
Kidd, George	Waiter	Winnipeg	Killed in action
Landstrome, G. A.	Locomotive man	Brandon	Killed in action
Long, William H.	Sleeping car cleaner	Toronto	Killed in action
McArthur, Thomas	Machinist	McAdam	Killed in action
Macdonell, Hugh W.	Assistant Solicitor	Toronto	Wounded and prisoner
McLean, Norman	Locomotive fireman	Winnipeg	Wounded
McNaught, James	Solicitor	Montreal	Killed in action
McReynolds, John	Telegraph operator	Toronto	Wounded
Maunsell, J. Q.	Law student	Toronto	Wounded
Montanelli, John	Tire setter	Angus	Killed in action
Morris, Glendon E.	Clerk	Montreal	Wounded
Nixon, John	Steamfitter's helper	Angus	Suffering from shock
Price, Herbert	Iron machinist	Angus	Suffering from shock
Reader, Charles P.	Ticket clerk	Medicine Hat	Wounded
Rogers, Henry G.	Bridge inspector	Montreal	Wounded
Rushworth, George	Car oiler	Winnipeg	Died of wounds
Taylor William A.	Operator	London Div.	Killed in action
Thompson, Harry M.	Clerk	Winnipeg	Wounded
Walrond George W.	Solicitor	Toronto	Wounded

Decapod Locomotives, Canadian Pacific Railway.

By J. W. Buckland, Chief Draughtsman, Angus Shops, Montreal.

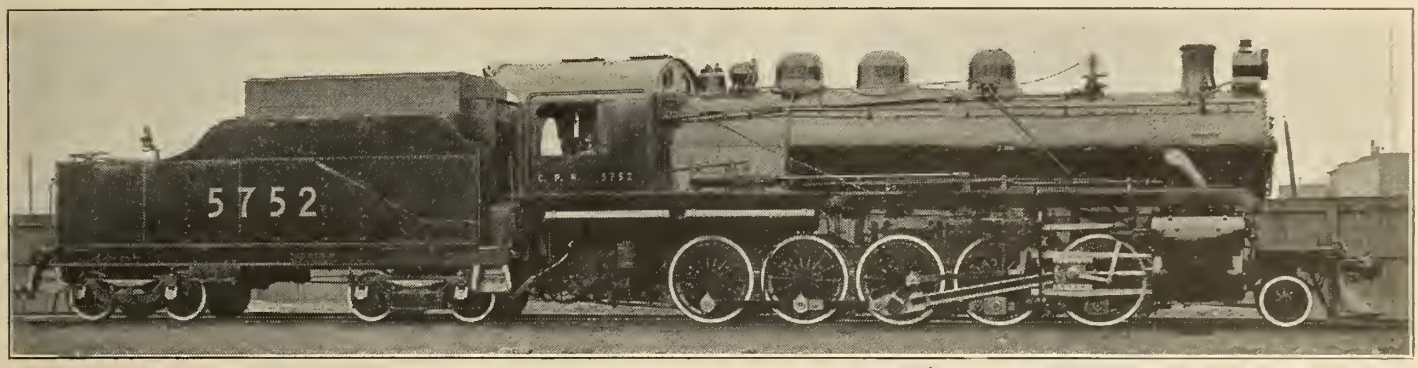
The question of economic and efficient locomotives is one which claims the attention of motive power officials and railway executives probably more at present than at any time in the history of railroading, and what is desired is an engine with maximum tractive effort that can be got over its division with the least possible delay. With this end in view it is imperative that a locomotive should be as simple as possible, both to operate and repair, and that its details should be made as fool proof as possible.

The subject of this article is the Decapod type of locomotives rebuilt recently at Angus shops, Montreal, from Mallet 0660 type, which had been until recently working on hill service in the Rockies. It was necessary, owing to demand of large power of this kind, to convert these locomotives with the least possible delay, and 30 days from the time the order was given, sketches were completed and work was under way in the shops. The first locomotive was turned out in another 20 days.

In a design of locomotive such as a decapod, with long driving wheel base it is necessary to introduce flexibility in order to insure proper tracking and minimize flange wear. For this reason the leading driving wheels on this locomotive were arranged to give 1 in. side play between shoes and driving box flange. See fig. 1. Incline planes have been applied over the leading driving wheels, in order to centre them when running on straight track, and the resistance due to weight applied to incline planes, provides guiding power when the locomotive is entering a curve.

With the application of the above to a pair of driving wheels it is necessary to provide flexibility to the side rods, in order to eliminate any undue strain to crack pins and rods. The design of flexible side rod connection is illustrated by fig. 2, from which it will be noted that it is a universal joint in its entirety, the crank pin being one axis of movement, and the brass, being turned on a vertical axis, provides for side sway of the rod. With this arrangement of joint, it is possible to provide a perfect lubrication to the crank pin and it is also simple to machine and maintain in the locomotive house. The arrangement of driving wheel and side rods described above can be applied to any locomotive, with minimum outlay, where trouble is experienced due to flanges cutting.

Another important feature of this design of locomotive, "which of necessity has long overhang beyond trailing driving wheel," is the location of the drawbar pin on the engine. It will be noted from the general arrangement in fig. 2, that this pin is located as close to rear driver as possible. This was done to reduce to a minimum the flange pressure of rear wheels when backing into curves.



Decapod Locomotive, Canadian Pacific Railway.

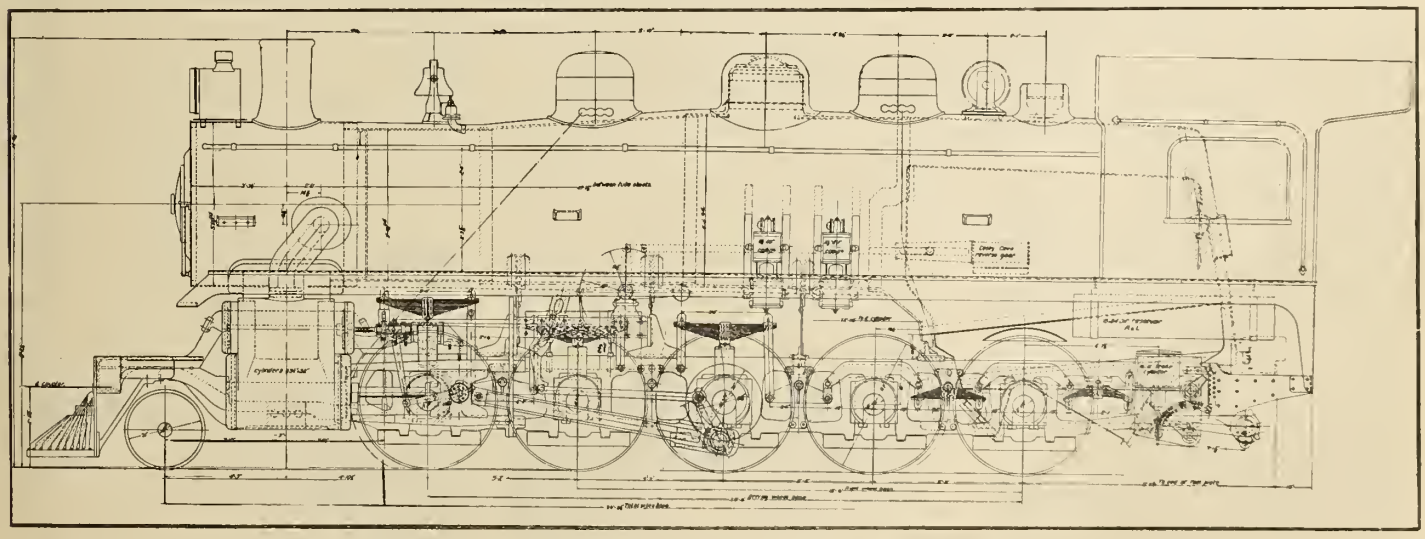


Fig. 2—Decapod Locomotive, Canadian Pacific Ry. Erecting Plan.

GENERAL DATA.

Tractive effort	61,500 lb.
Weight in working order	243,000 lb.
Weight on drivers	220,000 lb.
Weight on engine truck	23,000 lb.
Weight of engine and tender in working order	403,000 lb.
Total engine wheel base	29 ft. 9½ in.
Driving wheel base	20 ft. 8 in.
Rigid wheel base	15 ft. 6 in.
Wheel base, engine and tender	66 ft. 10⅝ in.

RATIOS.

Weight on drivers, tractive effort	4.26
Weight on drivers÷tractive effort	4.26
Total weight÷tractive effort	4.7.
Tractive effort x dia. drivers÷heat surface	973.
Evaporating heating surface÷grate area	43.56
Firebox heating surface÷tube and flue heating surface per cent.	7.6
Weight on drivers÷heating surface	71.7
Cylinder volume, cubic feet	16.04.
Heat surface÷cylinder volume	191
Grate area÷cylinder volume	3.68

CYLINDERS.

Kind.	Simple.
Diameter and Stroke	23½ x 32

VALVES.

Kind.	Piston.
Diameter	14 in.
Greatest travel	6½ in.
Steam lap	1 in.
Lead	¼ in.
Inside clearance	0

WHEELS.

Driving over tires	58 in.
Thickness of tire	3½ in.
Driving journals, main	10 x 14 in.
Driving journals, others	9½ x 12 in.
Engine truck wheels, diameter	31 in.
Engine truck axles, diameter	6 x 10 in.

BOILER.

Style, Radial stayed firebox, with cross stays, and conical course.

Steam pressure	200 lb.
Outside diameter of first ring	64¼ in.
Firebox length and width	10 ft. x 5 ft. 10⅞ in.
Firebox plates, thickness	⅝ in. crown, 5/16 in. sides

Firebox water space at ring .....
side 4½ in., throat 5 in., back 3½ in.
Tubes, number and outside diameter .....
154-2 in., 14-2¼ in.
Superheater flues, number, diameter and thickness . . .. 22-5¼ in. No. 8 I W G
Superheater pipes, number, diameter and thickness .....88-1 in. 00 5/32 thick
Tubes and flues, length .....18 ft. 7⅛ in.
Heating surface, tubes and flues .....2390 sq. ft.

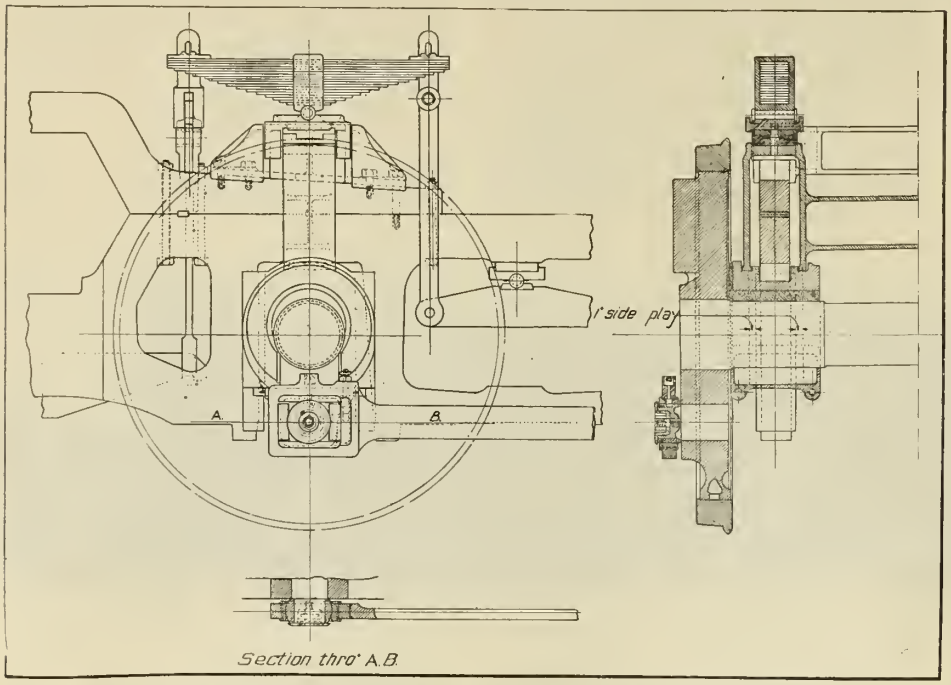


Fig. 1—Decapod Locomotive, C.P.R. Arrangement of Leading Driving Wheels.

Heating surface, firebox .....180 sq. ft.
Heating surface, total, including superheater 3076 sq. ft.
Superheating surface .....506 sq. ft.
Grate area .....59 sq. ft.
Smoke stack diameter .....16½ sq. ft.

TENDER.

Wheels, diameter .....36 in.
Journals, diameter and length .....5½ x 10
Water, capacity .....7,000 gals.
Coal capacity .....10 tons

The tender is equipped with 45 degree coal space, which eliminates the necessity of fireman having to shovel coal ahead on tender. In converting the tender from 5,000 to 7,000 gall. capacity, the tank was lengthened 6 ft. at the back portion and the frame was spliced at the front end, the splice being made to extend beyond the bolster of the leading truck, and the draft gear fastening at the rear was not touched.

The engine is equipped with two sandboxes, to insure proper gravitation of sand to desired points. Flange lubricators are applied to front and rear driver. The engine is also equipped with straight line Walschaert valve gear and self centering valve stem guide. The link is supported at each side with bearings on mill plate supports, which also support reversing crank arms. The crosshead arm has been eliminated and the union link is connected to the collar, which is welded to the crosshead as per fig. 3, thereby making the wrist pin fit independently of union link bearing.

The specialties include:—Casey-Cavin reverse gear; McCord force feed lubricator; Franklin butterfly type 8 fire door; Security brick arch.

Indian Railways Curtail Service.—A Delhi press dispatch says that among the new war measures adopted by the Indian Government is the severe curtailment of railway services.

A Bill Consolidating the Railway Act was read a second time in the House of Commons recently, and referred to a special committee.

Toronto Union Station Construction Progress.

Sufficient progress has been made on the new Toronto union station, being built on the Front St. site by the Toronto Terminals Ry. Co. to enable a definite idea to be obtained of its general size and form, and to gauge its effect upon the district. A complete description of the building, with perspective, main floor and other plans were given in Canadian Railway and Marine World for June, 1914.

The foundation work, including the tunnels, spaces for mechanical equipment, etc., is fully completed. The steel framework in both wings is completed, and that for the central portion of the building is well advanced. The floors are all completed in the west wing, and the outside walls in the west wing are completed to the second story. The stone for the remaining portion of the walls is practically all cut and on the site, so that when spring opens, it will be possible to proceed at a rapid a rate with getting it into position as the conditions of the labor market will allow. The work at present being gone on with is largely in the interior, but there is a shortage of labor, and progress is being made to it not as rapid as it otherwise would be.

The total quantity of concrete poured in the foundation work to the end of January was 4,511 cu. yds. In addition to this a large quantity of concrete has been used in other parts of the building. The total weight of steel to be used is approximately 5,000 tons, of which 4,601 tons had been erected to Jan. 30. In connection with the putting in of the stone, some interesting work will be the getting into position of the larger pieces, the largest of which, a part of the frieze, weighs 27 tons.

The carrying out of the work is in charge of R. W. Ambrose, Chief Engineer, Toronto Terminals Co.; H. K. Ferguson, representing the architects, Ross & Macdonald, and H. G. Jones, Montreal, with whom is associated J. M. Lyle, Toronto. W. T. Griffiths, represents the contractors, the Lyall Construction Co., Montreal.

C.P.R. Ontario District employes have made their 17th contribution, $500, to the Toronto and York County Patriotic Fund Association. The total contributed since Sept., 1915, is $12,850.

Agricultural Course Trains.—The C.P.R. put on a special train, starting from Medicine Hat, Jan. 29, and arriving at Lougheed, Alta., Feb. 24, visiting Ret-

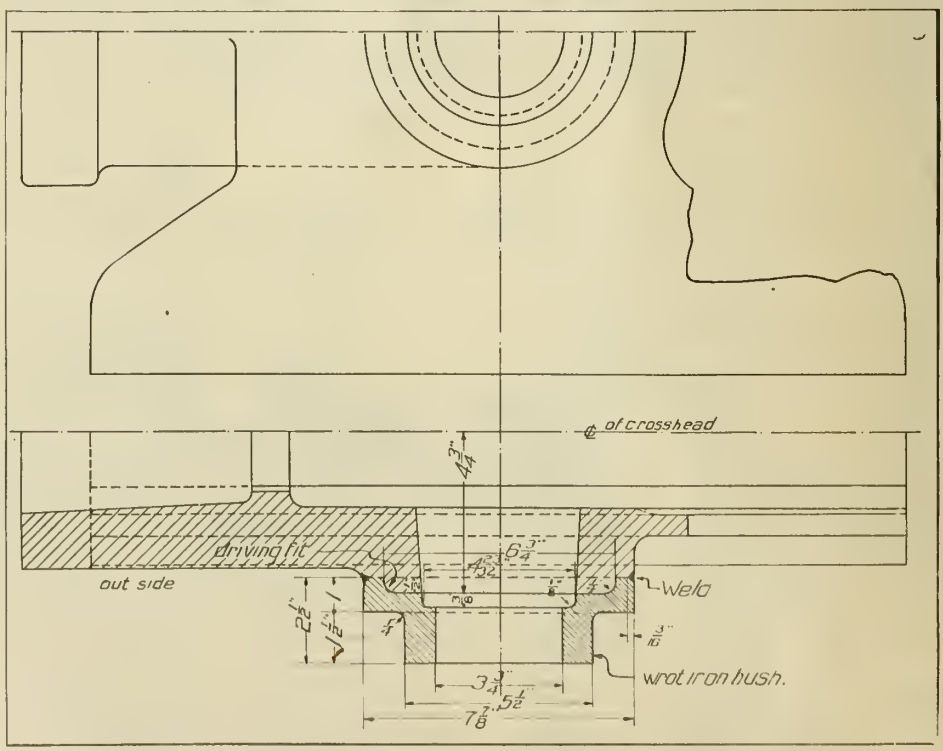


Fig. 3—Decapod Locomotive, C.P.R. Crosshead, Wrist Pin Bearing Bush.

law, Travers, Black Falls, Stettler and Veteran, for the purpose of providing short courses in agriculture in those districts. During March and April the Canadian Northern will operate a special train for similar purposes over its Alberta lines.

Freight and Passenger Traffic Notes.

The G.T.R. put into effect, Feb. 11, a further reduction of its passenger train service in order to facilitate freight traffic.

The G.T.R. has restored the Hamilton-Allandale mail train, leaving Hamilton at 6.40 a.m., which was cut off in the general reduction of passenger train service in January.

It is reported that the C.P.R. will open its Banff Springs Hotel earlier than usual this year, and that it is not unlikely it will be kept open in future during the entire year.

The Minneapolis, St. Paul & Sault Ste. Marie Ry. will, according to a press report, run a through train service between Duluth, Minn., and Winnipeg, Man., via Bernidji, Man.

The Pere Marquette Rd. has cancelled temporarily two trains between Sarnia and Blenheim, Ont. The only trains on that section of line now running are one reaching Sarnia at 11.45 a.m., and one leaving Sarnia at 4.05 p.m.

R. Creelman, General Passenger Agent, Canadian Northern Ry., Winnipeg, is reported to have said in Vancouver, B.C., Feb. 12, that the company proposed to open passenger agencies in Seattle, Wash., and other cities along the Pacific coast, with a view of directing United States tourist traffic towards British Columbia points.

The Minister of Railways stated in the House of Commons recently that he would look into the withdrawal of trains to and from St. John, N.B., making a direct connection with the I.R.C. Maritime Express at Moncton. There was such a connection until the recent reduction of trains and it is claimed that the present schedule is causing great inconvenience to travellers.

The G.T.R. Passenger Department claims that the upper berth in sleeping cars is winning popularity in an increasingly large measure with the travelling public. The points claimed in favor of the upper berth are: extra privacy, superior ventilation, less noise on account of the greater distance from the wheels and rails, and the fact that the cost is 20% less than that of a lower berth.

The C.P.R. announces that, from June 19 to Sept. 7, inclusive, special steamship expresses will leave Winnipeg 21.45 Tuesdays and Fridays, arriving at Fort William 10.00 next day, and will leave Fort William 8.30 Mondays and Fridays, arriving at Winnipeg 21.00 the same evening, thus connecting with the steamships Keewatin and Assiniboia to and from Port McNicoll. Prior to June 19, and after Sept. 7, passengers will use regular trains.

Niagara Frontier Lines. — The Public Service Commission for the Second District of the State of New York has under consideration an application to revoke a certificate of convenience and necessity granted to the Frontier Electric Ry. A U. S. publications says: "The case developed into a struggle between the Pennsylvania Rd. and the Delaware, Lackawanna & Western Rd. on the one hand, and the Erie Rd. on the other, for the business of the rich industrial territory at Niagara Falls and possibly future connections with the proposed extension of the Canadian Northern Ry. from Toronto. The Pennsylvania Rd. representatives informed the commissioners that it certainly was to be a local freight line with the possibility of later making part of a through freight line to Canada. The chairman of the commission said the commission had never entered into any enquiry as to the necessity of another freight line, and one of the other commissioners said: 'Irrespective of this controversy over business between the railways, I do not permit these railways to extend a new freight trunk line to the Canadian border without full notice to the people of the territory.' The commission decided not to dispose of the matter as between the companies until it was satisfied of the necessity for a new trunk freight line."

Pay of Enlisted C.G.R. Employes.— The Minister of Railways stated in the House of Commons recently the government was aware that F. P. Gutelius, General Manager, Canadian Government Railways, had issued a circular, Oct. 30, 1914, promising all officials and employes of those railways who enlisted or who would enlist in the active militia for overseas service their full salary or pay while in the military service, and that the government had approved and authorized the promise. Salary or wages will be paid to those having enlisted prior to Nov. 1, 1915, in accordance with circular 16, dated Oct. 30, 1914, and to those who enlisted subsequent to Nov. 1, 1915, salary or wages will be paid in accordance with circular 26, dated Nov. 8, 1915.

C.N.R. Taxes in Winnipeg. — The Supreme Court of Canada has thrown out both appeals in the case of the City of Winnipeg against the Canadian Northern Ry. The case arose out of the city levying taxes for $140 in 1914, which the company refused to pay, and the city purported to sell the land for taxes. To prevent the title being issued the C.N.R. paid the taxes under protest. In Dec., 1915, Judge Macdonald held in a Manitoba court that the city was acting ultra vires in assessing the land for local improvements. An appeal to the Manitoba Court of Appeal resulted in a decision that the company was liable for local improvements but was exempt from a levy for a special survey. Both parties took the case to the Supreme Court, which has decided to uphold the decision of the Manitoba Court of Appeal.

Protection to Workmen, while engaged under or about cars on regular repair tracks:—The Board of Railway Commissioners issued the following circular to railways recently:—It is the Boards' opinion that in addition to the blue flag by day, and the blue light by night, displayed as required by rule 26 of the General Train and Interlocking Rules, further protection should be adopted, by having all switches leading to regular repaid tracks locked with special locks, and the keys carried by the foreman in charge of the car repair work, or other responsible party, whose duty it should be to see that employes are warned and are clear from cars before any switching movement is made on such track, and to see that switches are relocked after switching movement is completed.

Exclusive Use of Sleeping Car Drawing Rooms.—The Interstate Commerce Commission has decided, in the case of Carter vs. Minneapolis, St. Paul & Sault Ste. Marie Ry., that it was not unreasonable for the railway to require a passenger, desiring the exclusive use of a sleeping car drawing room from St. Paul to Chicago, to purchase two railway tickets. This followed the decision in the case of the Nevada Railroad Commission vs. Southern Pacific Co.

Amendments to Baggage Regulations.

The Board of Railway Commissioners for Canada passed general order 179, Jan. 29, as follows:—General order 151, Nov. 8, 1915, prescribing regulations governing baggage car traffic, for the observance of every railway company within the legislative authority of the Dominion Parliament, other than government railways; and the application of M. J. Gorman, K.C., of Ottawa, for an order amending Rule 26 (d) of the said regulations. Upon reading what is filed in support of the application and on behalf of the Eastern Canadian Passenger Association; and upon the report of the Chief Traffic Officer of the Board, it is ordered that the said Rule 26, sub-section (d) be amended by adding after the word "the," the 7th word in the 2nd line, and before the word "carrier," the 8th word, the following words, "originating or terminating"; and by striking out the words "at destination," which are respectively the 9th and 10th words of the 2nd line of the sub-section: the railway companies to publish order in The Canada Gazette.

General order 181 was passed Feb. 3 as follows:—Re general order 179, Jan. 29, amending Rule 26, sub-section (d) of Regulations Governing Baggage Car Traffic, as prescribed by general order 151, Nov. 8, 1915. Upon reading what is filed on behalf of the Eastern Canadian Passenger Association, it is ordered that general order 179 be amended by adding after the word "sub-section," in the 7th line of the operative part of the order, the words, "and by striking out the word 'thereat,' the 4th word in the 3rd line of the said sub-section, and substituting therefor the words 'at destination.'"

S. D. Hogan, Contractor, is Suing the Northern Construction Co. and Mackenzie, Mann & Co., Ltd., for $115,S98.29 for work done and materials supplied on a section of the Canadian Northern Ry. near Yellowhead Pass. The point in dispute is the cost of removing earth and rock which, during the construction of the C.N.R., fell on the Grand Trunk Pacific right of way, which was extra work. The case will be tried before a jury of an Alberta court.

Engineers' Club of Toronto.—The report for 1916 shows a total membership of 550, of whom 400 are resident in Toronto. The officers for the current year are: President, E. L. Cousins, Chief Engineer, and Manager Toronto Harbor Commission; First Vice President, L. V. Rorke; Second Vice President, C. W. Power, Canadian Stewart Co.; Third Vice President, J. R. W. Ambrose, Chief Engineer, Toronto Terminals Co.

Railways Enquiry.—The estimates submitted to the House of Commons recently contain an item of $120,000 to provide for an enquiry and a report on the railway situation of Canada, which is being made by the commission, of which A. H. Smith, President, New York Central Rd., is Chairman. One-quarter of the sum was voted by the House of Commons, Feb. 1.

Members of the Western Canadian Live Stock Union, B.C., and of the United Farmers of Alberta, met the traffic officials of the C.P.R. Western Lines at Winnipeg, Feb. 3, to discuss rates to summer pastures, etc.

The Missouri Pacific Ry. was sold by auction at St. Louis, Mo., Feb. 21, for $16,151,000 to R. H. Nielson and J. W. Holmes, representing a reorganization committee.

Canadian Transportation Men, Engineers, Etc. in the War.

The Dominion Power & Transmission Co., of Hamilton, Ont., has had 126 employes enlist for overseas service.

The C.P.R. Has Given six Red Cross cars to the Canadian Military Hospitals Commission, to be used for wounded and invalided soldiers.

Private H. Howard, of the King's Liverpool Regiment, killed in action, was engaged in the Freight Department, G.T.R., Liverpool, Eng., from July, 1914.

Corporal R. C. Murrow, who has been awarded the military medal for a deed of great gallantry, was, for four years prior to enlisting, in the Passenger Department, C.P.R., Liverpool, Eng.

Gunner John Callaghan, of Montreal, who has been wounded in the face, hands and thigh, is 30 years old and has been overseas for two years. He was employed in the Montreal Tramways Co.'s shops at Youville, Montreal, before enlistment.

Lt. Col. B. R. Hepburn, M.P., of Picton, Ont., formerly President, Ontario & Quebec Navigation Co., who is second in command of one of the Canadian forestry battalions overseas, was one of a party of members of the Canadian House of Commons which visited the British Grand Fleet recently.

Lieut. A. E. Spendlove, formerly Manager, Lake Shippers Clearance Association, Winnipeg, has returned on leave. While in charge of a machine gun section on the Somme last September, he was severely wounded, and was in a hospital for some time, during which he was given the Military Cross.

Hector K. Morrison, Jr. Can.Soc.C.E., was was Resident Engineer, Canadian Northern Ry., Pembroke, Ont., and went overseas in the Canadian Engineer, from which he was transferred to the Royal Engineers Railway Corps, as lieutenant, has returned to Toronto recently, on a short leave of absence. He is a son in law of H. K. Wicksteed, M.Can.Soc.C.E., Chief Engineer of Surveys, Mackenzie, Mann & Co., Ltd.

Lt. Col. G. S. Cantlie, formerly General Superintendent of Car Service, C.P.R.,who really gave up those duties in Oct., 1914, although he was not officially given leave of absence until Jan. 8, 1915, has been connected with the 5th Regiment, Royal Highlanders of Canada, for a number of years, having risen to the lieutenant-colonelcy. He sailed from Montreal June 10, 1915, with the 42nd Battalion, C.E.F., Royal Highlanders of Canada. He was slightly wounded in the arm Sept. 15, 1916, but did not have to give up duty. He is at present in Montreal on a short leave of absence.

Gerald Hiam was District Passenger Agent, C.P.R., at Fort William, Ont., until the summer of 1915, when he went into the 73rd Battalion, Montreal, as a lieutenant, and then transferred to the 198th Battalion (Buffs), Toronto, as captain. In order to get overseas quickly he reverted to lieutenant, went to England in Sept., 1916, and to France in Oct., 1916, with the 14th Battalion (Royal Montreal), in which he has now been promoted to second in command of A. Company. His brother, F. A. Hiam, formerly private secretary to Sir Donald Mann, is Captain and Adjutant of the 198th Battalion.

Lieutenant James McNaught, 2nd Battalion, 18th Royal Scots, who was killed in action recently, was born at Walkerton, Scotland, Apr. 23, 1883, and was educated for the legal profession, qualifying as a solicitor in Edinburgh. He came to Canada in 1906, and on Apr. 23, 1906, entered the C.P.R. legal service at Montreal as assistant to Solicitor. He was appointed Assistant Solicitor, Jan. 1, 1912, and Solicitor, Aug. 1, 1914. In the early part of 1915, he undertook a course of military training with the McGill Battalion, and on Nov. 17, 1915, he left Montreal for Scotland, where he joined the 18th Royal Scots as a private. He continued his training until June, 1916, when he was selected for an officer's course, qualified in October, and was drafted to the Somme front early in December. He was killed Jan. 7.

Albert Henry Kendall, who was announced in our last issue as having been appointed Captain, No. 1 Section, Skilled Railway Employes, was born at Aspatria, Cumberland, Eng., Apr. 4., 1878, and

A. H. Kendall,
formerly Master Mechanic, Ontario District, C. P. R., Toronto, now Captain, No. 1 Section, Skilled Railway Employes.

served his apprenticeship with the Canada Atlantic Ry. at Ottawa. From June, 1901, to Mar., 1902, he was machinist, C.P.R., Revelstoke, B.C.; Mar., 1902, to Jan., 1903, Locomotive Foreman, C.P.R., Nakusp, B.C.; Jan. to Dec., 1903, General Foreman, C.P.R., Revelstoke, B.C.; Dec., 1903, to Dec., 1904, Locomotive Foreman, G.T.R., London, Ont.; Dec., 1904, to Dec., 1913, leading hand, General Erecting Foreman, Angus shops, C.P.R., Montreal; Dec., 1913, to Apr., 1915, General Foreman, C.P.R., North Bay, Ont.; Apr., 1915, to Aug., 1916, Assistant Works Manager, Locomotive Department, Angus shops, C.P.R., Montreal; Aug., 1916, to Jan., 1917, Master Mechanic, Ontario District, C.P.R., Toronto.

E. W. DuVal, who is taking an officer's training course at Regina, Sask., with a view to active service overseas, was born at Toledo, Ohio, June 5, 1885, and entered railway service, July 1, 1902, since when he has been, to June 1, 1905, in Superintendent's office, Canadian Northern Ry., Winnipeg, and at Port Arthur, Ont.; June 1, 1905, to Jan. 2, 1911, successively, secretary to General Superintendent, Central Division, C.P.R., Winnipeg; chief clerk to Superintendent, District 2, Central Division, C.P.R., Winnipeg; assistant chief clerk to General Superintendent, Central Division, C.P.R., Winnipeg; chief clerk to General Superintendent, Western Division, C.P.R., Calgary, Alta.; chief clerk to Assistant General Manager, and, later, to General Manager, Western Lines, C.P.R., Winnipeg; Trainmaster. C.P.R. Terminals, Calgary, Alta.; Jan. 2, 1911, to Apr. 6, 1912, Superintendent, District 1, Saskatchewan Division, C.P.R., Moose Jaw; Apr. 6, 1912, to May, 1913, Superintendent, District 4, Manitoba Division, C.P.R., Souris; May, 1913, to Feb., 1917, Superintendent, Saskatoon Division, Saskatchewan District, C.P.R., Saskatoon.

Major Edmond H. Drury, M.Can.Soc. C.E., Assistant Director General of Engineering Service, Militia Department, attached to the headquarters staff, died suddenly in his apartments at Ottawa, Feb. 1, aged 66. He was born at St. John, N.B., and graduated with honors at the Royal Military College, Kingston, Ont., specializing in civil engineering. He was on the staff of the late Jas. Ross on C.P.R. construction in the British Columbia mountains in the early eighties. He was engaged on the construction of the C.P.R. short line to St. John, N.B., and later on had charge of the first survey for a Dominion Government railway to Hudson Bay. He was also engaged on the construction of the Cuba Rd. for the late Sir William Van Horne, and subsequently. He was at one time Resident Engineer for the Mexican Light & Power Co., at Mexico City, and subsequently had charge of the Dominion Government surveys for the Hudson Bay Ry. Afterwards he became Chief Engineer for the Chilean Rd. at Antafagasta, but illness compelled him to go to England for treatment, and it is said that he never fully recovered. On the outbreak of war he offered his services to the Dominion Government and became Assistant Director General of Engineering Services.

C.P.R. Hotel Rates.—As stated in Canadian Railway and Marine World recently, the Hotel Palliser, Calgary, started operating on the European plan on Jan. 1, and the Chateau Frontenac, Quebec, will adopt the same plan on May 1. During the coming summer, Banff Springs Hotel and Chateau Lake Louise will also be operated exclusively on the European plan, the rates for rooms being $2 a day and upwards.

George Bury in Russia.—A London, Eng., cablegram of Feb. 12 said:—Messages from Petrograd announce that receptions were given to the allies' delegates under Lord Milner at Moscow. One of the members of the party is George Bury, the Canadian Pacific Railway Vice President, who is advising the Russian Government on railway matters.

The Roberval-Saguenay Ry. advised the Quebec Public Utilities Commission recently that it intended suspending, temporarily, the train service on the Laterriere Branch, owing to shortage of coal, but it was ordered to continue the service unless it could show a more satisfactory reason for its discontinuance.

Grand Trunk Railway Car Shops at Port Huron.

The car shops which the G.T.R. is erecting at Port Huron, Mich., to replace those destroyed by fire are located on a site acquired in 1915 by the citizens from the Port Huron Engine & Thresher Co., which had erected a new plant on another site. The site has two frontages, one on Griswold St., and the other on Twenty-eighth St. The layout shows nine blocks of buildings laid out round the power house, which is located in the centre of the block. Following is a list of the buildings with their dimensions:—Large passenger car shop, 304 x 135 ft.; small passenger car shop, 235 x 135 ft., to which will be joined up a cabinet shop, 250 x 73 ft. These two buildings will be served by a transfer table 60 ft. wide. The office, 63 x 59 ft., will be combined with the store building, 153 x 59 ft. The other buildings are: Paint shop, 50 x 25 ft.; power house, 96½ x 70 ft.; wood mill, 210 x 90 ft.; dry lumber store, 146 x 46 ft.; dry kilns, 80 x 41 ft; machine shop and blacksmith shop, each 30 x 75 ft., but combined in one building; freight car shop, divided into two parts, each 361 x 79 ft.

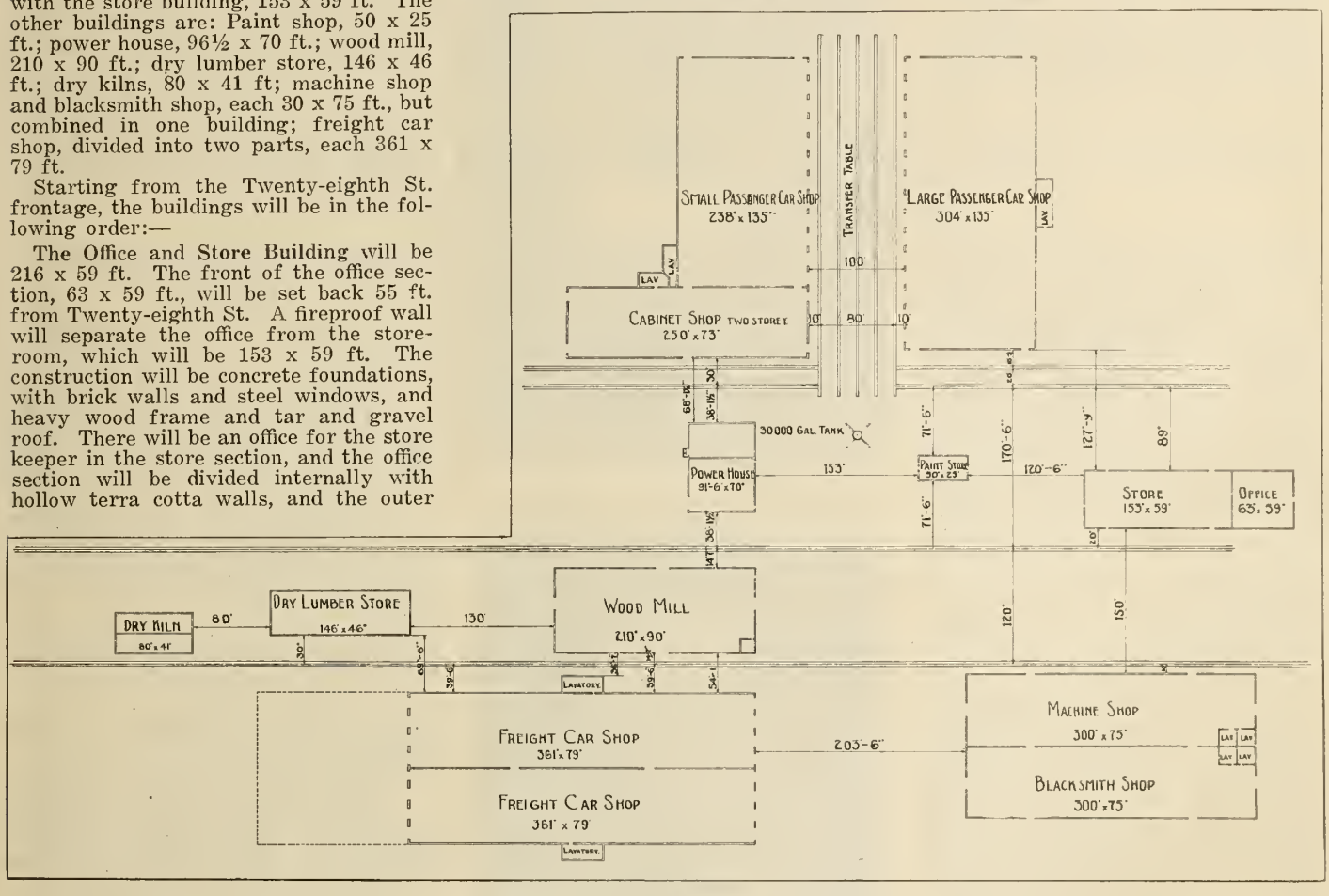
Starting from the Twenty-eighth St. frontage, the buildings will be in the following order:—

The Office and Store Building will be 216 x 59 ft. The front of the office section, 63 x 59 ft., will be set back 55 ft. from Twenty-eighth St. A fireproof wall will separate the office from the storeroom, which will be 153 x 59 ft. The construction will be concrete foundations, with brick walls and steel windows, and heavy wood frame and tar and gravel roof. There will be an office for the store keeper in the store section, and the office section will be divided internally with hollow terra cotta walls, and the outer ft., by a fireproof wall. These shops, in which steel and wood cars will be built, are planned for the material to enter at one end and the finished cars to leave at the other. The construction will be concrete foundation; brick walls; with steel windows; interior posts and roof; roof to be covered with 4-ply roofing felt, tar and gravel. The monitors, which will run from end to end of the building, are to be of wood with similar roofing material.

The Wood Mill, 210 x 90 ft., will be midway between the freight car shop and the power house. It will be entirely wood framed on a concrete foundation. The wood framing will be of a substantial type, and the walls will be formed with 2 in. of concrete, reinforced with expanded metal, thus making a permanof regulation, and provision will also be made for the introduction of steam as required. The walls will be insulated by air cavity and also the roof, so that even temperature may be maintained.

The Paint House, 50 x 25 ft., will be about midway between the store building and the power house. It is to be of fireproof construction throughout, concrete foundations, brick walls, concrete floor, reinforced concrete roof, slab-covered, with 4-ply roofing material, tar and gravel, steel sashes and wood door.

The Power House, 91½ x 80 ft., will be about 150 ft. to the rear. Between the power house and the paint shop will be a 30,000 gall. tank. This will be of wood, erected on a steel trestle 50 ft. high. This power house will be built on concrete



Grand Trunk Railway Car Shops at Port Huron.

walls will be lined inside with the same material, all surfaces of walls and ceilings being plastered and painted.

Machine and Blacksmith Shops.—The block in which these shops will be situated lies next, and will be 95 ft. from the Twenty-eighth St. frontage. It will be 300 x 150 ft., and will be divided into two parts lengthwise, each being 300 x 75 ft. The foundations are to be concrete, with brick walls, wood interior posts and roof, steel window sashes and wood doors; roof to be covered with 4-ply roofing felt, with tar and gravel; monitors to be wood with similar roofing. The partition wall between the two shops will be of fireproof construction.

Freight Car Shops.—Just over 200 ft. to the rear of the machine and blacksmith shops will be the double freight car shop. It is to be 361 x 158 ft., and will be divided into two parts, each 361 x 79 ent finish which will be fireproof. The roof will be tar and gravel. All windows will have steel sash.

The Dry Lumber Store will be an old wood building, 146 x 46 ft., removed from the Thresher Co.'s plant, and adapted to the railway requirements.

The Dry Kiln will be 80 ft. behind the dry lumber store. It will be a specially designed building 80 x 41 ft., in two sections, with sliding doors at each end, thus enabling a car load of timber to enter at one end and be removed when dried at the other, no delay or inconvenience being occasioned through having to remove one car to get at or remove another, and each section will be separate from the other and capable of being used independently. The heat will be supplied by steam pipes located below rail level, and a special system of air ducts will provide ample air changes, which will be capable foundations, brick walls, wood roof on steel trusses, steel window sashes and wood doors. The roofing material will be similar to that of the car shops.

The Power Plant will consist of 6 return tubular boilers totalling 900 boiler h.p. The boiler pressure will be 150 lbs. per sq. in., and 4 of the boilers will be fitted with superheat, giving 150 degrees of superheat when coal is used, and 200 degrees when wood refuse is used. The boilers will be adapted for hand firing, as this arrangement would appear to be best, on account of the large amount of refuse, varied in character, which will be burned.

Other units for developing power for lighting and operating will be: Two impulse turbo-generators of 300 k.w. each, to be used for generating 3-phase electrical energy at 440 volts, the usual low power factor being raised to a high figure

by the use of a synchronous motor-generator, supplying the necessary direct current power. Two air compressors of 1,500 cu. ft. capacity, of the cross compound type, specially adapted for use with superheated steam. The superheat of the air compressors may be controlled by proportioning their supply of wet steam. Boiler feed and vacuum pumps and open type feed water heater of 1,000 h.p. capacity will also be installed. The boilers will be provided with a steel stack 150 ft. above grade and 6½ ft. diameter.

The heating requirements for the shops will be considerable, due to the large amount of special work in the nature of painting and varnishing, and altogether about 50,000 sq. ft. of radiation will be necessary. This will be supplied by exhaust steam from the power house, in cast iron radiators of the wall type. Coal will be directly delivered to bunkers inside the power house, by hopper cars, discharging through a steel trestle.

The Passenger Car Shops are so planned that each car under construction or repair will occupy one bay of either building, with a liberal allowance between the cars for working. These two buildings will be parallel to one another, with a space of 100 ft. between occupied by a transfer table which will serve both. The construction will be of concrete foundations, brick walls with steel windows. The roofs are designed with monitors, which will run across the length of the building and so light and ventilate each individual bay. The large shop, which will be 325 ft. from the Twenty-eighth St. frontage, and 295½ ft. from the Griswold St. frontage, will be 304 x 135 ft. The smaller shop will be 238 x 135 ft.

The Cabinet Shop, 250 x 73 ft., will be at the end of the smaller car shop and facing the power house. It will be 2 stories, and of similar construction to the passenger car shops.

Sanitary accommodation and lockers will be provided in each building, for a full complement of workmen. Ample storage spaces for steel, wheels, lumber, etc., have been allowed for, and the layout generally has been planned with special attention to economical working.

The Railway Traffic Congestion in Ontario and Quebec.

The Premier submitted in the House of Commons on Feb. 7 a memorandum from the Chief Railway Commissioner, Sir Henry Drayton, which was referred to the Board of Railway Commissioners' judgment of Jan 8, published in Canadian Railway and Marine World for February, said:—The following statement gives the number of trains cancelled, locomotives released, crews released, and reduction of train mileage daily and weekly, with the resultant approximate coal saving on the Canadian Pacific, Grand Trunk, and Canadian Northern Railways:

	C.P.R.	G.T.R.	C.N.R.
Trains cancelled	59	57	18
Locomotives released	24	28	12
Crews released	27	19	15
Train miles reduced daily	3,611	3,409	1,924
Train miles reduced weekly	25,280	23,866	11,544
Approximate coal saving in tons per week	1,204	1,137	577

The above statistics, as reported by the railway companies, are confirmed by present time tables and the observations of the Board's operating department. All the equipment available has been put in freight service, but the freight service has not enjoyed the full benefit of the additions, owing to the fact that the companies have been running for some time at high pressure, with locomotives so busy that they were not being repaired as and when they should, with the result that a comparatively large number of locomotives are now under repair.

The weather conditions have been such that the anticipated movement has not been obtained. Effective steps were taken to increase the supply of coal, coke, and raw materials for munition works by the car ferries over Lake Erie. The sudden piling up of ice entirely prevented this movement. For the first time in some 30 years even passenger ferries at Detroit were either unable to run or were impeded in their work, and for some time the car ferries running between Windsor and Detroit had to cease operation.

Coincident with the reduction of passenger service, weather conditions became and have continued bad and transportation rendered difficult. These difficulties have been the more acute owing to the shortage of labor. The different yards at terminal and transfer points were blocked with snow. The snow was not removed while in a soft condition, as the railways claim owing to a shortage of men, and the work of cleaning up the yards at once became both expensive and difficult. At Messina Springs, for example, the G.T.R. reported on Feb. 6 that they could get only a limited number of men to dig out coal cars, urgently required in Ottawa, although they were paying wages as high as $4 a day in view of the emergency.

The effect of weather conditions may be illustrated by the investigation held by the Board with reference to the service between Quebec and Chicoutimi. Weather conditions were, comparatively speaking, favorable for the period Jan. 1 to 13, both days inclusive. During that period the line under observation carried 538 passenger cars, 1,626 freight cars, and 25 snow ploughs, or a total of 2,189 cars. In making this total haul, 2,074 tons of coal were consumed. During the second period under observation, Jan. 14 to 24, both inclusive, there were moved over the line, 290 passenger cars, 1,620 freight cars, and 33 snow ploughs,—total 1,943 cars. In making this movement, and for an 11 day period as against 13 days in the first instance, no less than 2,626 tons of coal were consumed. As a result, it would seem that, during the second period, with 2 days less operation, 552 tons of coal were burned in excess of that consumed in the former period, although 246 less cars were carried.

The conditions today leave very much to be desired. The movement is not what it ought to be. Beyond all question it would have been a great deal worse had the passenger service not been reduced. The approximate amount of coal saved by reducing the service is 2,918 tons a week. These figures are not based upon extraordinary conditions, but upon ordinary operating conditions. If it had been at all possible to have maintained the old passenger service and carry on freight business, which I very much doubt, a much larger amount than this tonnage would have been required.

With the coal shortage common both to United States and Canadian points, differing only in degree at different centres, and with the railways, disappointed in their own coal movement, commandeering coal for the purpose of keeping their trains running, if the result of the decreased passenger service has merely enabled munition works and coal dealers to obtain the coal formerly consumed in the passenger service, rendering unnecessary, as the reduction does, confiscation of coal at least to that extent, on this ground alone the reduction of passenger service, in my view, was entirely justified. The reduction, however, has done more than this. It has enabled the railways, even under the present trying conditions, to continue the coal movement, to continue hauling a sufficient quantity of grain to be turned into flour for the overseas forces, and to continue the service to the munition plants, with the result that, although impeded, these most necessary activities have been carried on.

Objections have naturally been made to the reduced service, but I think I may say that wherever those members of the public who are complaining have learned the traffic conditions obtaining in the country, the necessity of keeping up the movement of food and munitions to the front and the supplying of coal and feed corn and other necessities to our own people, the reductions and all consequent inconveniences have been cheerfully accepted.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	$3,834,200	$2,636,800	$1,197,400	$ 711,000
Aug.	3,684,900	2,612,900	1,072,000	614,300
Sept.	3,187,900	2,455,300	732,600	x177,300
Oct.	3,716,800	2,496,500	1,220,300	x36,700
Nov.	3,722,300	2,472,300	1,250,000	38,600
Dec.	3,485,400	2,661,600	823,800	x378,300
	$21,631,500	$15,335,400	$6,296,100	$ 771,600
Incr	$4,279,900	$3,508,300	$ 771,600	.....

Approximate earnings for Jan., $2,832,600, and for two weeks ended Feb. 14, $1,095,600 against $2,086,800, and $882,500 for same periods in 1916 respectively.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	$12,247,440.39	$8,230,348.66	$4,017,091.73	$1,216,688.61
Aug.	13,570,467.31	7,802,680.46	5,467,786.85	2,025,472.13
Sept.	12,134,159.96	7,004,400.80	5,129,759.16	384,458.52
Oct.	13,237,086.36	7,562,346.99	5,674,739.37	x904,694.78
Nov.	13,401,943.90	7,837,983.76	5,563,960.14	x790,452.89
Dec.	12,426,867.44	7,405,438.83	5,021,428.61	x278,806.01
	$76,717,965.36	$45,843,199.50	$30,874,765.86	$1,250,578.72
Inc.	$10,247,801.52	$8,997,222.80	$1,250,578.72	.....

Approximate earnings for January, $9,941,000, and for two weeks ended Feb. 14, $4,070,000, against $8,380,000, and $3,788,000 for same periods 1916, respectively.

Grand Trunk Railway Earnings.

The aggregate traffic receipts of the system from Jan. 1 to Jan. 21, are:

	1917	1916	Inc.	Dec.
G.T.R. . .	$2,502,040	$2,179,719	$322,321	.....
G.T.W.R. . .	461,573	467,418	.....	$5,845
D.G.H. & M.R.	151,204	152,694	.....	1,490
Totals . .	$3,114,817	$2,799,831	$314,986	.....

Approximate earnings for two weeks ended Feb. 14, $1,757,133, against $1,895,132 for same period, 1916.

Grand Trunk Pacific Ry. Earnings.

The approximate earnings of the Prairie Section, 916 miles for three weeks ended Jan. 21, were $223,104 against $228,958, for same period, 1916.

Mainly About Railway People Throughout Canada.

J. B. O'Brien, railway contractor, Renfrew, Ont., has been elected a director of the Dominion Permanent Loan Co., Toronto.

J. H. Tremblay, who died at Winnipeg, Feb. 8, was the contractor for the construction of the Canadian Northern freight sheds there.

Mrs. J. A. Phippen, mother of F. H. Phippen, K.C., General Counsel, Canadian Northern Ry., died at Belleville, Ont., Feb. 20, aged 81.

D. B. Hanna, Third Vice President, Canadian Northern Ry., has sold his house, Thornliebank, Castle Frank Road, Toronto, to G. H. Wood, of Wood, Gundy & Co., bond brokers, etc.

E. B. Thomas, heretofore President, Lehigh Valley Rd., has been appointed Chairman of the Board of Directors, and also acts as Chairman of the executive and finance committees.

R. G. Reid, General Superintendent, Reid Newfoundland Co., and Mrs. Reid, were passengers, en route for Montreal, on one of the company's trains which was wrecked near Glenwood, Nfld., Feb. 5.

F. M. Black, Calgary, Alta., Treasurer and Assistant Secretary of P. Burns & Co., Ltd., is reported to have been appointed a member of the Alberta Public Utilities Commission, in succession to the late John Stocks.

Edward E. Loomis, heretofore Vice President, Delaware, Lackawanna & Western Rd., has been appointed President, Lehigh Valley Rd., Philadelphia, Pa., vice E. B. Thomas, appointed Chairman of the Board.

A. S. McLean, who was appointed Assistant General Superintendent of Hotels, Canadian Northern Ry., Winnipeg, recently, was presented with a gold watch by the staff of the company's Prince Arthur Hotel, Port Arthur, Ont., where he had been Manager for some time.

Sir Melbourne Tait, formerly Chief Justice of the Superior Court of Quebec, who died suddenly at Montreal, Feb. 10, aged 75, was father of Sir Thomas Tait, President, Fredericton & Grand Lake Coal & Ry. Co., and of H. M. Tait, Assistant General Agent, Steamship Department, C.P.R., Calgary, Alta.

A. E. McMaster, who resigned as Division Freight Agent, Grand Trunk Pacific Ry., Edmonton, Alta., recently, on his appointment as Assistant Secretary, Canadian Manufacturers' Association, is spending some time in Ontario before going to British Columbia, where his office will be located. Early in February he was sent to Detroit to assist in the movement of coke and help generally in relieving congestion of traffic at the border.

Archie R. Kenyon, who has been appointed Travelling Passenger Agent, C.P.R., Boston, Maine, was born at Hyde Park, Mass., Mar. 31, 1891, and entered railway service, June 1, 1908, since when he has been, to June 1, 1909, ticket stock clerk, Boston & Maine Rd., Boston, Mass.; June 1, 1909, to Jan. 10, 1915, clerk and chief clerk, Advertising Department, same road; Jan. 10, 1915, to Jan. 1, 1917, excursion and rate clerk, same road.

Arthur John Hills, who has been appointed Assistant to the Executive, Canadian Northern Ry., Toronto, was born there, Feb. 15, 1879, and entered C.N.R. service in Apr., 1899, since when he has been, to June, 1901, Stores and Material Agent, Construction Department, in Manitoba; June, 1901, to Dec., 1903, clerk, General Superintendent's office, Winnipeg; Dec., 1903, to Jan., 1908, in

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J. E. Duval,
General Superintendent of Transportation, Grand Trunk Railway.

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C. Kelso,
Master Mechanic, Grand Trunk Railway, Stratford, Ont.

Third Vice President's office, Toronto; Jan., 1908, to July, 1914, Superintendent, C.N. Ontario Ry., Toronto; July, 1914, to Aug., 1916, General Superintendent, Eastern Lines, Toronto; Aug., 1916, to Feb. 10, 1917, in Third Vice President's office, Toronto.

J. E. Duval, who has been appointed General Superintendent of Transportation, G.T.R., Montreal, entered transportation service, Nov., 1884, as agent and operator, Canada Atlantic Ry., now part of the G.T.R., Coteau Landing, Que., and from May, 1885, to 1902, was train dispatcher; 1902 to 1904, Chief Inspector, Board of Railway Commissioners; and in 1906 he organized the Canadian Car Service Bureau, of which he was appointed Manager, and held that position until Aug. 1, 1913, when he was appointed General Superintendent of Car Service, G.T.R., Montreal.

Lady Tait, wife of Sir Thomas Tait, is the principal beneficiary under the will of her mother, Mrs. G. R. R. Cockburn, who died in Toronto recently, leaving an estate valued at $345,826. Sir Thomas Tait was bequeathed $1,000, and there were also several other personal and charitable bequests. Lady Tait receives a life interest in property in Wheeling, Va., which at her death reverts to her daughter. She also receives the household goods and personal effects, except a diamond necklace bequeathed to Miss Tait. The Wheeling property, at her death, reverts to her daughter, and she and her daughter share equally in the residue of the estate.

Christopher Kelso, who has been appointed Master Mechanic, G.T.R., Stratford, Ont., was born at Liverpool, Eng., Mar. 17, 1876, and came to Canada in 1891, completing his education at the High School, Kingston, Ont. He entered Canadian Locomotive Co.'s service, on leaving school, and remained there for ten years. He subsequently entered Canada Foundry Co.'s service at Toronto, remaining three and a half years, and entered G.T.R. service Sept. 2, 1909, at Stratford, Ont., and has since acted there in various capacities. He recently completed the revising and installing of the present bonus efficiency system, which is in force throughout the system.

John B. Livingston, who has been appointed Storekeeper, Western Lines, G.T.R., Battle Creek, Mich., was born at Point Edward, Ont., Apr. 9, 1873, and entered G.T.R. service, Nov. 10, 1887, since when he has been, to Feb. 16, 1891, clerk, Stores Department; Feb. 17, 1891, to June 30, 1896, fuel foreman; July 1, 1896, to Apr. 30, 1897, chief clerk Stores Department; May 1, 1897, to Oct. 31, 1898, clerk, Motive Power Department; Nov. 1, 1898, to Jan. 31, 1906, Storekeeper; Feb. 1, 1906, to Oct. 31, 1908, chief clerk, Motive Power Department, all at Fort Gratiot, Mich; Nov. 1, 1908, to Jan. 31, 1917, chief clerk, Motive Power Department, Battle Creek, Mich.

William J. Sturges, whose appointment as acting Assistant Purchasing Agent, Grand Trunk Pacific Ry., Winnipeg, was announced in our last issue, was born at Fairfield, Vt., Aug. 28, 1877, and entered transportation service in Apr., 1897, since when he has been, to Apr., 1898, clerk, Master Mechanic's office, Ogdensburg & Lake Champlain Ry., Malone, N.Y.; Apr., 1898, to Dec., 1899, billing clerk, Canada Atlantic Transit Co., Depot Harbor, Ont.; Jan., 1900, to Nov., 1907, accountant, Stores Department, Central Vermont Ry., St. Albans, Vt.; Nov., 1907, to Apr., 1914, storekeeper, Grand Trunk Pacific Ry., Portage

la Prairie, Man.; Apr., 1914, to Jan. 11, 1917, storekeeper, same road, Transcona, Man.

John E. Long, who has been appointed Secretary, Canadian Government Railway's Centre, St. John's Ambulance Association, Moncton, N.B., was born at New Scotland, N.Y., Oct. 28, 1883, and entered railway service, Aug. 15, 1901, since when he has been, to Jan. 7, 1907, telegraph operator and station agent, New York Central Rd., at various points on the Mohawk Division; Jan. 1, 1907, to Apr. 1, 1909, Travelling Car Agent, same road, Rochester, N.Y.; Apr. 1, 1909, to Dec. 31, 1913, engaged in personal injury accident work in the Law Department, same road, Utica, Syracuse and New York; Jan. 1, 1914, to Feb. 1, 1917, Safety Engineer, Canadian Government Railways, Moncton, N.B.

Arthur T. Smith, whose appointment as Travelling Freight and Passenger Agent, Canadian Northern Ry., Halifax, N.S., was announced in our last issue, was born at Burlington, N.S., June 13, 1888, and entered railway service, Mar. 21, 1907, since when he has been, to Mar., 1908, clerk and stenographer, Halifax & Southwestern Ry., Bridgewater, N.S.; Mar., 1908, to 1909, claim clerk, same road, Halifax, N.S.; 1909 to 1911, clerk and secretary to General Manager, same road, and Eastern Lines, Canadian Northern Ry., Halifax, N.S.; 1911 to 1913, chief claim clerk and coal sales clerk, H. & S.W.R., and Inverness Ry. & Coal Co., Halifax, N.S.; 1913 to Jan., 1917, chief clerk, Traffic Department, H. & S.W.R., Halifax, N.S.

Reginald William Douglas Harris, who has been appointed Trainmaster, Moose Jaw Division, Saskatchewan District, C.P.R., Moose Jaw, was born at Victoria, B.C., Dec. 12, 1879. He was from 1897 to 1904, with the Bank of British North America in Victoria and Vancouver, and from 1904 to June, 1905, was engaged in civil engineering, as assistant to F. J. Ritchie, D.L.S., in British Columbia. He entered C.P.R. service in June, 1905, since when he has been, to June, 1906, wiper, Field, B.C.; June, 1906, to June, 1911, fireman, Revelstoke, B.C.; June, 1911, to Apr., 1914, locomotive man, Revelstoke, B.C.; Apr., 1914, to May, 1916, Trainmaster, Wilkie, Sask.; May, 1916, to Feb. 2, 1917, Trainmaster, Kenora Division, Manitoba District, Ignace, Ont.

Woodville N. Ingram, whose appointment as Master Mechanic, District 4, Intercolonial Division, Canadian Government Railways, Stellarton, N.S., was announced in our last issue, was born at Harcourt, N.B., Mar. 15, 1877, and entered the Government Railways service, Oct. 8, 1899, since when he has been, to Jan. 27, 1900, wiper, Moncton, N.B.; Jan. 27, 1900, to Apr. 4, 1905, fireman, Moncton, N.B.; Apr. 4, 1905, to May 1, 1906, locomotive man, Moncton, N.B.; May 1 to Nov. 1, 1906, instructor of firemen, Riviere du Loup, Que.; Nov. 1, 1906, to Jan. 1, 1908, instructor of firemen, Moncton, N.B.; Jan. 1, 1908, to Jan. 1, 1915, locomotive man, Moncton, N.B.; Jan. 1, 1915, to July, 1916, travelling locomotive man, Montreal; July to Dec. 14, 1916, Master Mechanic, District 5, Intercolonial Division, Edmundston, N.B.

F. D. Fitzmaurice, who was appointed Assistant General Superintendent, Eastern Grand Division, New York, New Haven & Hartford Rd., recently, was born at Bedford, N.S., Aug. 2, 1865, and entered railway service in 1881, with the Intercolonial Ry., remaining with that road until 1884; May, 1884, to July 1, 1891, operator, New York & New England Rd., Boston, Mass.; July 1, 1891, to 1903, dispatcher, same road; 1903, Chief Dispatcher, same road; 1903 to 1907, Assistant Superintendent, Norwich Division, New York, New Haven & Hartford Rd.; 1907 to Aug., 1912, Trainmaster, same road, New Haven, New York, Harlem River and other points; Aug., 1912, to May 25, 1914, Superintendent, Western Division, same road, Waterbury, Conn.; May 25, 1914, to Jan. 8, 1917, Superintendent, Providence Division, same road.

A. R. Macgowan, A.M.Can.Soc.C.E., who has been appointed Superintendent, District 5, Intercolonial Division, Canadian Government Railways, Edmundston, N.B., was born at Moncton, N.B., Jan. 16, 1883, and entered railway service in 1899, since when he has been, to June, 1902, clerk in Accountant and Treasurer's office, Intercolonial Ry., Moncton, N.B.; June, 1902, to Mar., 1905, rod man and transit man, I.R.C., Moncton, N.B.; Mar., 1905, to Jan., 1906, contractor's engineer, North Maine Seaport Ry., Bangor Me.; Jan. to Nov., 1906, Resident Engineer, Somerset Ry., Moosehead, Me.; Nov., 1906, to May, 1915, Assistant Engineer, I.R.C., Moncton, N.B.; May, 1915, to Jan., 1916, Division Engineer, I.R.C. and Prince Edward Island Ry., Moncton, N.B.; Jan. to July, 1916, Principal Assistant Engineer, Canadian Government Railways, Moncton, N.B.

J. M. McKay, who has been appointed Superintendent, Saskatoon Division, Saskatchewan District, C.P.R., Saskatoon, was born at Tiverton, Ont., Mar. 13, 1868, and entered railway service in Sept., 1895, since when he has been, to May, 1897, brakeman, Northern Pacific Ry., Winnipeg; May, 1897, to Sept., 1899, brakeman, C.P.R., Winnipeg; Sept., 1899, to Mar., 1906, conductor, C.P.R., Winnipeg; Mar., 1906, to June 10, 1911, Trainmaster, District 2, Central Division, C.P.R., Winnipeg; June 10, 1911, to June 10, 1912, acting Superintendent of Terminals, C.P.R., Winnipeg; June 10 to Aug. 1, 1912, Trainmaster, District 2, Manitoba Division, C. P.R., Wininpeg; Aug. 1 to Dec. 14, 1912, Trainmaster, District 1, British Columbia Division, C.P.R., Revelstoke; Dec. 14, 1912, to Feb. 2, 1917, Superintendent, Revelstoke Division, British Columbia District, C.P.R., Revelstoke.

William C. Paul, whose appointment as Assistant Trainmaster, Algoma Central & Hudson Bay Ry., Steelton, Ont., was announced in our last issue, was born at Coldstream, Ont., Dec. 22, 1889, and entered railway service Feb. 1, 1907, since when he has been, to Sept., 1908, car checker, Algoma Central & Hudson Bay Ry., Tagona, Ont.; Sept., 1908, to May, 1910, clerk, General Superintendent's office, same road, Sault Ste. Marie, Ont.; May, 1910, to Feb., 1911, accountant, same office, same road, Sault Ste. Marie, Ont.; Feb., 1911, to Oct. 1914, chief clerk, Superintendent's office, same road, Sault Ste. Marie, Ont.; Oct., 1914, to May, 1916, chief clerk, General Superintendent's office, same road, and Algoma Eastern Ry., Sault Ste. Marie, Ont.; May to Dec., 1916, chief clerk, General Manager's office, A.C. & H.B.R., Sault Ste. Marie, Ont.; Dec., 1916, to Jan. 15, 1917, chief clerk, General Superintendent and Chief Engineer's office, same road, Sault Ste. Marie, Ont.

H. B. Fleming, who has been appointed Chief Dispatcher, District 5, Intercolonial Division, Canadian Government Railways, Edmundston, N.B., was born at Moncton, N.B., in 1858, and entered railway service in 1873, since when he has been, to 1874, in stationery stores department, Intercolonial Ry.; 1874 to 1878, relieving operator and station agent, I.R.C.; 1878 to 1879, relieving dispatcher, I.R.C., at Truro, N.S., Moncton and Campbellton, N.B.; 1879 to 1898, dispatcher, Halifax and St. John Division, I.R.C., Moncton, N.B.; 1898 to Nov. 7, 1912, Chief Dispatcher, Springhill and St. John Division, I.R.C.; Nov. 7, 1912, to Sept., 1913, Assistant Superintendent, Halifax and St. John Division, I.R.C., Moncton, N.B.; Sept., 1913, to Nov., 1914, Superintendent, National Transcontinental Ry., between Moncton and Edmundston, N.B.; Nov., 1914, to July, 1916, Superintendent, District 5, Intercolonial Division, Canadian Government Railways, Edmundston, N.B.

John Stocks, one of the Public Utility Commissioners for Alberta, died suddenly at Edmonton, Alta., Feb. 9. He was born at Sherrington, Que., in 1858, and spent his younger days in the vicinity of Sherbrooke, Que. In 1881, he entered the employ of a construction company, which subsequently merged with C.P.R. interests, and went to the west in that service. After a couple of years as foreman of construction, he was promoted, and subsequently became Superintendent of Construction and Maintenance on the C.P.R., from Swift Current, Sask., to Laggan, B.C. In 1901, he was appointed Chief Engineer for the old Northwest Territorial Government, and subsequently became Deputy Minister of Public Works, which position he held until the formation of the Province of Alberta, in 1905, when he was appointed Deputy Minister of Public Works for the province. He resigned that position in Oct., 1915, on his appointment as one of the members of the Alberta Public Utility Comission, just then formed.

H. J. Humphrey, who has been appointed acting Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal, was born at Berry's Mills, N.B., Jan. 26, 1879, and entered railway service in June, 1896, since when he has been, to Aug., 1897, telegraph operator at various points, Intercolonial Ry.; Aug., 1897, to Aug., 1901, telegraph operator, Boston & Maine Rd.; Aug., 1901, to Apr., 1902, telegraph operator, Intercolonial Ry.; May 9, 1902, to Sept. 6, 1903, telegraph operator, C.P.R., Calgary, Alta.; Sept. 6, 1903, to June 1, 1907, dispatcher, C.P.R., Calgary, Alta.; June 1, 1907, to Nov. 1, 1909, dispatcher, C.P.R., Medicine Hat, Alta.; Nov. 1, 1909, to Apr. 10, 1911, dispatcher, C.P.R., Calgary, Alta.; Apr. 10, 1911, to July 1, 1912, Chief Dispatcher, C.P.R., Macleod, Alta.; July 1, 1912, to Jan. 8, 1915, Car Service and Fuel Agent, Saskatchewan Division, C.P.R., Moose Jaw; Jan. 8, 1915, to Jan. 1, 1916, Superintendent of Car Service, Western Lines, C.P.R., Winnipeg; Jan. 1 to Nov. 6, 1916, Superintendent of Car Service, Eastern Lines, C.P.R., Montreal; Nov. 6, 1916, to Feb., 1917, Superintendent, Farnham Division, Quebec District, C.P.R., Farnham.

J. G. Taylor, who died at Moose Jaw, Sask., recently, was General Superintendent, Saskatchewan Division, C.P.R., Moose Jaw, until he retired, May 1, 1916, on account of ill health. He was born at Ottawa, Ont., Aug. 1, 1860, and spent several years in Northern Pacific Ry. service at Wilmer, Missoula and Spokane. He entered C.P.R. service in May, 1878, as operator and dispatcher at Ottawa, and resigned in 1882. He re-entered C. P. R. service in May, 1899, as agent at Elko, B.C., and from Aug., 1889, to May,

1900, was dispatcher at Cranbrook, B.C. From May, 1900, to Sept. 1, 1902, he was Inspector in connection with train miles, and later was acting Superintendent, Brandon, Man.; Apr. 1, 1903, to Aug. 8, 1904, Superintendent, Cranbrook, B.C.; Aug. 8, 1904, to Mar. 1, 1907, Assistant Superintendent, Brandon, Man., and Fort William, Ont.; Mar. 1, 1907, to Feb. 17, 1908, Superintendent, Fort William Terminals; Feb. 17, 1908, to Nov. 1, 1909, Superintendent, Moose Jaw, Sask.; Nov. 1, 1909, to Jan. 1, 1911, Superintendent, Medicine Hat, Alta.; Jan. 1, 1911, to Apr. 20, 1912, General Superintendent, Lake Superior Division, North Bay, Ont.; Apr. 20, 1912, to May 1, 1916, General Superintendent, Moose Jaw, Sask.

William Lyon Mackenzie, Bridge Engineer, Western Lines, Canadian Northern Ry., Wininpeg, died suddenly at his home there, Feb. 6. He had been engaged in his customary duties during the day, and there was no indication of ill health. He was born at Galt, Ont., Apr. 2, 1860, and commenced railway service in May, 1879, since when he was, to Dec., 1879, rod man on construction, Credit Valley Ry.; Jan., 1881, to Feb., 1882, rod man and transit man on location, Toronto & Ottawa Ry.; Apr., 1882, to July, 1884, Assistant Engineer on construction, Northern & Pacific Jct. Ry.; May, 1887, to Jan., 1889, Assistant Engineer on Construction, International Ry. of Maine (C.P.R. Short Line); May, 1389, to Jan., 1890, transit man on location, Toronto, Hamilton & Buffalo Ry.; Feb., 1890, to Apr., 1891, Assistant Engineer on construction, Charleston, Cincinnati & Chicago Ry., in Tennessee; 1892 to 1897, Assistant Engineer on construction, C.P.R. Branch Lines in Ontario; Jan., 1898, to June, 1900, Assistant Engineer on construction, British Columbia Southern Ry.; July, 1900, to Feb., 1903, Assistant Engineer and Locating Engineer, Canadian Northern Ry.; Mar., 1903, to the time of his death, Bridge Engineer, Western Lines. Canadian Northern Ry., Wininpeg. He was educated at the Galt Collegiate Institute, Galt, Ont., and the University of Toronton, whence he graduated as a civil engineer. He was a member of the Canadian Society of Civil Engineers from 19108, and was President elect of the Manitoba Branch of that society for the current year. The funeral at Winnipeg, Feb. 9, was attended by numerous representatives of the various railway companies there.

M. B. Murphy, who has been appointed Manager, Winnipeg Joint Terminals, Canadian Northern, Canadian Government and Grand Trunk Pacific Railways, was born at Napa, Cal., Sept. 11, 1866, and entered railway service, Jan. 24, 1889, since when he has been, to Jan., 1895, successively, operator, agent, brakeman, conductor, yardmaster, dispatcher, chief dispatcher, and connected with the construction department in charge of construction of the Nantaskett Branch, Union Pacific Rd.; Jan., 1895, to Mar., 1898, county clerk, Carbon County, Wyo.; and subsequently enrolling and engrossing clerk in charge of compilation of session laws of fourth Legislature of Wyoming; Mar. to July, 1898, dispatcher, Union Pacific Rd.; July to Nov., 1898, in charge of locomotive performance statistics, Chicago, St. Paul, Minneapolis & Omaha Ry., Itasca, Wis.; Nov., 1898, to Jan. 16, 1899, operator and dispatcher, Eastern Minnesota Ry., West Superior, Wis.; Jan. 16, 1899, to July 31, 1900, dispatcher and Chief Dispatcher, Northern Pacific Ry., Staples, Minn., and Glendive, Mont.; July 31, to Nov., 1900, Chief Dispatcher, Union Pacific Rd., Green River, Wyo.; Nov., 1900, to Jan., 1903, Chief Dispatcher, Denver & 1903, Rio Grande Rd., Minturn, Col.; Jan. 1903, to Sept. 30, 1906, Chief Dispatcher and Trainmaster, El Paso & Northeastern Rd., Alamogordo, New Mexico; Sept. 20, 1906, to Jan. 1, 1910, Trainmaster, Mexican Central Ry., Chihuahua, Mexico; Jan. 1 to Apr., 1910, General Yardmaster, Omaha, South Omaha and Council Bluffs terminals, Chicago & Great Western Ry.; May 1, 1910, to Feb. 27, 1911, Trainmaster, District 2, Central Division, Canadian Northern Ry., Winnipeg; and during Aug. and Sept., 1910, acting Superintendent, C.N.R., Winnipeg; Feb. 27 to Nov., 1911, Superintendent, Duluth, Winnipeg & Pacific Ry., Virgina, Minn.; Nov., 1911 to Sept., 1915, Superintendent, District 2, Central Division, Canadian Northern Ry., Winnipeg; Sept., 1915, to Jan., 1917, Superintendent, District 4, Western Division, same road, Calgary, Alta.

Traffic Orders by Board of Railway Commissioners.

Interchange Track at Calgary.

25837, Jan. 29. Re order 24191, Sept. 17, 1915, directing the C.P.R. to give up possession of the land necessary to enable the Grand Pacific Ry. to build interchange track and make connection with C.P.R. track near the Globe elevator, Calgary, Alta., as shown on plan approved by order 24085, Aug. 19, 1915; and the application of the G.T.R. for an order apportioning the cost of the maintenance of the interchange track: It is ordered that the cost of maintaining the said change track, constructed under orders 24085 and 24191, be borne and paid by the G.T.P.R. Co.

Freight Rate on Feldspar.

25846, Feb. 2. Re complaint of A. E. Hanna, M.P., of Perth, Ont., against rate quoted by C.P.R. on feldspar from Maberly or Mud Lake to East Liverpool, Ohio: It is ordered that the rate to be charged by the C.P.R. on feldspar, in carloads of the minimum weight of 25 net tons, from Maberly, Ont., to East Liverpoor, Ohio, be $3.04 per net ton; and that the schedule to give effect to this order be published and filed not later than Feb. 10.

Minimum Weight for Logs.

25847. Re complaints of Hay & Co., of Woodstock, Ont., and of J. H. Still Manufacturing Co. of St. Thomas, Ont., that they are unable to load a 36- ft. flat car with logs to a minimum of 50,000 lbs.: It is ordered that the complaints be dismissed.

Shingle Rates from British Columbia.

25852. Re application of Shingle Agency of British Columbia, on behalf of shingle manufacturers of British Columbia for an order requiring railway companies to furnish a milling and sorting-in-transit rate: Upon hearing the application at Vancouver, June 26, 1916, the applicants and the Canadian Pacific, Canadian Northern and Great Northern Railway Companies being represented, it is ordered that the application be refused.

Timber Rates from Midland.

25861. Re application of Allegheny Lumber Co. of Pittsburg, Pa., for an order directing the G.T.R. to put into effect a through rate of freight on lumber from Midland, Ont., to Cleveland, Ohio, and to authorize reparation to the same basis on past ships. Upon hearing the application at Toronto, Oct. 5, 1916, the G.T.R. being represented, no one appearing for the applicant, and what was alleged; and upon reading what has been filed in support of the application and on behalf of the G.T.R., and the report of the Chief Traffic Officer of the Board, and its appearing that the rate from Midland to Cleveland, complained of, is unjustly discriminatory against Midland and in favor of Penetang, Ont., it is ordered that the application for a refund be dismissed, that the G.T.R. desist from charging a greater rate on lumber, in carloads, from Midland to Cleveland, Ohio, than it publishes and charges to the same point from Penetang.

Rates on Canned Goods and Hardware.

25872, Feb. 20. Re application of Vancouver and Victoria Boards of Trade, Dominion Canners, Limited, Glasco, Limited, Oakville, Ont., and the City of Victoria, for an order postponing the proposed increase in the commodity freight rates on canned goods and hardware from Eastern Canada to points on the Pacific coast of British Columbia, as set out in Supplement 3 to Canadian Freight Association Westbound Tariff 1, effective Feb. 12, 1917. Upon reading what is filed in support of the applications and on behalf of the Canadian Freight Association, it is ordered that the application be refused.

Revised Express Classification.

General Order 180, Jan. 30. Re application of Express Traffic Association of Canada, on behalf of the express companies subject to the Board's jurisdiction, for approval of revised Supplement 10 to Express Classification for Canada, C.R.C. 3 (first submitted as no. 8); also including therein Supplement 11 (first submitted as no. 10), omitting the proposed conditions of carriage relating to carload waggon service and pick-up and delivery service, and Supplement 12 (first submitted as no. 11), omitting items relating to cigars, cigarettes and tobacco. Upon its appearing that objections to certain of the proposed changes in rules and ratings were, by consent of the parties represented at the hearings in Winnipeg, June 12, 1916, Saskatoon, June 14, 1916, and Edmonton, June 15, 1916, left to be settled between the interested parties in Eastern Canada, and those affected by the proposed changes, as they now appear in the said revised Supplement 10, having notified the Board of their consent thereto, it is ordered that the said revised Supplement, submitted to the Board by C. N. Ham, Secretary, Express Traffic Association of Canada, with his letter of Jan. 16, 1917, attached hereto and marked A, be approved.

Excursion Rates Prohibited. — The Chief Railway Commissioner for Canada, Sir Henry Drayton, wrote the Canadian Northern, Canadian Pacific and Grand Trunk Railways recently as follows: "I am writing to remind you of the fact that, during the period of congestion and reduced passenger service, it was clearly understood and directions given that no excursion or reduced rates were to be put into effect. On the other hand, passenger traffic was to be discouraged instead of encouraged, so that the freight congestion might be relieved. I assume that your company is not contemplating any reduced or excursion rates whatever either now or prior to April 30."

Railway Development, Projected Lines, Surveys, Construction Betterments, Etc.

Alberta & Great Waterways Ry.—A press report, dated Jan. 30, stated that the track laying going ahead reached mileage 231, or 59 miles from McMurray, Alta. It was expected to complete the track laying to that point before the end of the winter. (Feb., p. 50.)

Alberta-Hudson Bay Ry.—The High River and Hudson Bay Ry. is applying to the Alberta Legislature to change its name to the Alberta-Hudson Bay Ry., to extend the time for the building of its projected railway from High River to the Alberta-Saskatchewan boundary, and for authority to build the following extensions or branches: From near Black Diamond, in Tp. 20, Range 2, west 4th Meridian, southerly to Lundbreck, or Cowley or the Crows Nest Southern Ry., thence to the Alberta-British Columbia boundary at the South Kootenay or Kishenchna Pass; from Lundbreck or Cowley southerly to the International Boundary near Waterton Lakes; from Lundbreck or Cowley southeasterly to Pincher Creek, Cardston and Coutts, thence easterly through Tps. 1, 2 and 3 to the Alberta-Saskatchewan boundary; from Cardston to Lethbridge; from Tps. 1 or 2, between Ranges 3 and 10, to Medicine Hat, thence northerly to Tp. 17 or 18 in Ranges 1, 2, 3 or 4, west of the fourth meridian. Power is also asked to increase the capital stock to $8,000,000. F. Crandell, Calgary, is General Manager. (See High River & Hudson Bay Ry.

British Columbia & White River Ry.—The Dominion Parliament is being asked to extend the time for construction for this projected railway from Bear Creek, where it is to cross the International Boundary between Alaska and British Columbia, to the Chilkat River, thence northwesterly to the Alsete River, through the Shakwak valley to Lake Kluane, along the Donjek valley to the White River, thence to the International Boundary between the Yukon Territory and Alaska between the 62nd and the 64th parallels of latitude. The provisional directors named in the act of incorporation, passed 1911, are: C. M. Marpole, G. E. MacDonald, Angus McDonnell, Jas. Ironside, Vancouver, B.C., and J. Rosene, Seattle, Wash. (May, 1915, pg. 170.)

Bonanza Coal & Coke Co.—The Alberta Legislature is being asked to incorporate a company with this title with power, among other things, to build a railway from Crowsnest station on the C.P.R., through the south half of Section 13, Tp. 7, Range 6, west of the 5th Meridian. MacKay, McDonald & Co., Edmonton, Alta., are solicitors for applicants.

Cascade Scenic Ry.—The provisional directors named in the bill before the Dominion Parliament for the incorporation of a company with this title are: T. R. Deacon, E. J. Burleigh, J. A. McCullough, E. Anderson, Winnipeg. The offices are to be at Winnipeg, and the capital is fixed at $250,000. The company is formed for the purpose of acquiring from T. R. Deacon the rights granted him by the Dominion Government of a conditional license for the occupation of lands for right of way, station and rest house on Cascade Mountain, at Banff, Alta.; to build the railway and to operate the same. (Jan., pg. 19.)

The Central Canada Rd. & Power Co. is asking the Manitoba Legislature to extend the time within which it may build its projected electric railway from the northern or eastern boundary of Winnipeg to Selkirk, and from either Winnipeg or Selkirk to points on the Winnipeg River, and to Lake Winnipeg via Selkirk or otherwise by a route outside the city of Winnipeg. This was the line as laid out by chap. 56 of the statutes of 1905, which also gave the company power to acquire running rights over other companies' lines. In 1911 the act was amended by authorizing the company to build a railway from Winnipeg to St. Boniface northeasterly to the Winnipeg River in Typs. 17, 18 or 19, thence to the northern boundary of the province, with branch lines to Lake Winnipeg, subject to the approval of the Lieut.-Governor in council. The provisional directors named in the original act are: J. D. McArthur, Jas. Tees, J. S. Gray, W. A. Ducker, H. E. Carstens, W. W. McLeod, I. Pitblado, G. C. Mills, A. N. McPherson, Winnipeg.

The bill now before the Manitoba Legislature asks for the confirmation of the powers conferred by the original and the amending acts, and for the extension of time for the construction of the railway authorized by the amending act of 1911. It would seem therefore that the power to build the electric railway has lapsed, and that the company seeks only power to extend the time for building the steam railway except for the provisions of sec. 3 of the bill, which says:—"The corporate existence of and all the powers and privileges granted to the company by its act of incorporation, 4-5 Edward VII, chap. 56, and by the act amending the same, 1 George V, chap. 80, are hereby re-enacted, and the same are hereby declared, notwithstanding anything contained in the said act of incorporation and amendment, or in The Manitoba Railway Act, to be in full force and effect." The second reading of the bill was debated in the Legislature, after a division, Feb. 8. (April, 1911, pg, 365.)

Central Canada Saskatchewan Ry. — The Saskatchewan Legislature is being asked to incorporate a company with this title to build a railway from the western boundary of the province in Tps. 61, 62 or 63 easterly to Tps. 61 or 62, Range 8 west of the 3rd Meridian, thence southeasterly to Prince Albert, and any extension of the said line, or other lines as the company may be authorized to build, as may be designated by the Lieutenant Governor in council. The capital of the company is fixed at $1,000,000, with bonding powers for $20,000 a mile; its office is to be at Regina, and the provisional directors are: J. D. McArthur, W. P. McDougall, D. W. Campbell, R. A. Hazelwood and J. K. McLennan. This company is an offshoot of the Central Canada Ry., which is being built in Alberta, by the same interests, which company is applying to the Alberta Legislature for power to build a line to the Alberta-Saskatchewan boundary. (Feb., pg. 50.)

Dominion Government Railway to Hudson Bay.—$3,000,000 has been placed in the Dominion estimates for expenditure during the current year on the construction of the railway, now building from Pas to Port Nelson, the terminals and a grain elevator. Of that sum $750,000 was voted on account Feb. 1 by the House of Commons.

R. McArthur, one of the contractors on the line, is reported to have said, Jan. 30, that the railway will be completed this year. There is about 9 miles of grading to be completed, about 90 miles of track yet to lay, and 2 single span bridges to be built in addition to the one under construction at Kettle Rapids on the Nelson River. (Jan., pg. 19.)

Edmonton, Dunvegan & British Columbia Ry.—The material for the big bridge at Peace River is being hauled in and work is reported to be in progress on the river banks, getting ready for starting work on putting in the substructure. It is reported that arrangements have been completed between the company and the government for the provision of facilities for general traffic over the bridges. An announcement of the terms upon which this will be done will be made when the government's railway legislation is brought down. (Feb., pg. 50.)

Esquimalt & Nanaimo Ry.—The City of Victoria, B.C., is applying to the Board of Railway Commissioners for vehicular rights over the E. & N.R. bridge, in connection with what is known as the new Johnson St. bridge, and the Attorney General of the province has consented to intervene in order that a question of public right may be settled. The bridge was originally built in 1887, and it is claimed that it was then understood that the public were to have vehicular rights over it. These rights do not seem to have been exercised, or the circumstances under which they were to have been exercised do not appear to have arisen. With the opening up of the Songhees Indian reserve for railway and public purposes, a new condition arose, and the Johnson St. bridge was planned as a general traffic and railway bridge. The adjustment of matters as to the bridge has been under discussion between the city council and the C.P.R., which owns the E. & N.R., for nearly a couple of years. (Jan., pg. 19.)

Essex Terminal Ry.—We are officially advised that it is not thought probable there will be any work done on the proposed extension from Ojibway to Pelton, Ont., this year, but the matter is not yet finally settled. The extension into Ojibway, completed in 1916, has been passed by the Board of Railway Commissioners for operation. (Feb., pg. 50.)

Grand Trunk Ry.—A press report states that construction on the Southern New England Ry., a subsidiary of the Central Vermont Ry., itself a subsidiary of the G.T.R., will be resumed at an early date, and that the line from Palmer, Mass., to Providence, R.I., will be completed.

A suggestion has been made in Hamilton, Ont., that the company should abolish its cross town line, on Ferguson Ave., or build a subway on King St.

The Brantford, Ont., City Council has passed a resolution directing its Railway Committee to make formal application to the Board of Railway Commissioners for the construction of a subway under the tracks at St. Paul's Ave.

A press report states that the company will instal a mechanical interlocking plant at Frazier, Mich., to consist of a 20-lever frame interlocking machine, having 4 levers for 4 home signals, 2 levers for 2 dwarf signals, 5 levers for 6 derails, and 4 levers for 4 facing point locks. The layout will include 2 one-arm, two-position, lower quadrant mechanical signals, 2 two-arm, two-position upper quadrant mechanical home signals, 2 one-arm, two-position, mechanical dwarf signals, and 2 one-arm, three-position, distant signals. Four disc and 2 semaphore type indicators will be installed in the tower. (Feb., pg. 50.)

Great Northern Ry.—It is expected that the new station at the False Creek flats, Vancouver, will be completed and ready for occupancy in May.

The locomotive house under construction will have accommodation for 10 locomotives, and the building is so arranged that accommodation for an additional locomotive can be added. In connection with this building a repair shop is being built. (Feb., pg. 50.)

Intercolonial Ry.—The Minister of Railways stated in the House of Commons recently that $96,360.26 had been expended since Jan. 1, 1915, for improving grades and alignment, and $677,791.08 had been expended for building heavier bridges and culverts and strengthening the old ones.

The Minister of Railways stated in the House of Commons, Feb. 1, that the elimination of level crossings at Trenton, N.S., had been given consideration and a sum had been placed in the estimates for the year to provide funds for the building of a subway north of the Eastern Car Co.'s works there.

Tenders are under consideration for putting in the substructure of a new bridge across the Gaspereaux River, N.B. (Dec., 1916, pg. 484.)

Kitsault River.—Application has been made to the B. C. Government by L. W. Patmure, et al, Prince Rupert, for permission to build a narrow gauge line in the Alice Arm district, from the coast about 18 miles up the valley of the Kitsault River, to the Dolly Varden claims. The applicants desire to lay the line along a roadway which they had built. The government is favorable to the building of the line, which will carry ore and freight, but not passengers, and has authorized an investigation, and if this is favorable to the project, will grant the necessary permission.

Maine Central Rd.—Application has been made to the Maine Legislature to authorize the company to build a branch line from near Bancroft, on the European & North American Ry., which the M.C.R. leases, northerly and northeasterly through Haynesville, Weston and Orient, Aroostook County, to the easterly boundary of the state, and to connect there with a line to be built by the Dominion Government. A U.S. press report states that the Canadian Government Railways has been looking for a route for a connection with New England points, and has made tentative surveys.

Michigan Central Rd.—We are officially advised that the company has a force of men engaged at Niagara Falls, Ont., making surveys, plans and production tests in the vicinity of the cantilever bridge across Niagara River. When the preliminary work and estimates are completed the company will determine what will be done, either in the way of strengthening or rebuilding the present bridge, or the construction an entirely new one. A press report states that the rebuilding of the bridge had been started and that the work would be completed in eight months. (Jan., pg. 20.)

Minneapolis, St. Paul & Sault Ste. Marie Ry.—A press report says the company has under consideration tenders for the building of an extension from the termination of the present line at Whitetail, Sheridan County, Mont., to the International Boundary, opposite Coutts, Alta., 200 miles, the line to cut across Montana about 10 miles south of the International Boundary line and pass about 17 miles north of Havre, a divisional point on the Great Northern Ry. The report is that the line will connect up with the C.P.R. Weyburn-Lethbridge line at Pakowki, or Fremont, Alta. (Jan., pg. 20.)

National Transcontinental Ry.—The Minister of Railways stated in the House of Commons recently that the cost of clearing the line and removing stones falling into cuts between Hervey Jct. and Fitzpatrick, from Apr. 1 to Dec. 1, 1916, was $819.83; and for the same work for the same period between Fitzpatrick and Parent, $12,131.83. Nothing was paid for similar work during the same period between Parent and Doucet. (Sept., 1916, pg. 364.)

North Vancouver, B.C.—The ratepayers are being asked to vote on a bylaw granting the Capitans Timber Co. the right to build a logging railway over certain of the streets in the municipality.

Northern Pacific Ry.—Arrangements are reported to have been made for building a freight shed, 200 x 50 ft., on a site adjoining the Great Northern Ry. wharf at New Westminster, B.C. The building will, it is said, be of frame, sheeted with corrugated galvanized iron, and roofed felt, tar and gravel. The estimated cost is reported at $11,500, and it is said a contract will be let at an early date and that the work will be completed within two months thereafter.

Pacific Great Eastern Ry.—P. A. McIntyre, of the Provincial Engineering Department, has been appointed engineer on behalf of the British Columbia Government to supervise and certify the expenditures made by the company out of the loan of $6,000,000 authorized at the Legislature's last sitting. Payment of $74,145 for work done on the line during Nov., 1916, was authorized at a meeting of the executive council, Jan. 20.

Residents of North Vancouver are urging the Government to take steps to see that the section of the line from the present end of track out of North Vancouver, to Squamish, is built so as to be completed by the time the other section of the line to Fort George is finished. A train service is being operated from Squamish to Clinton ,and track is being laid from Clinton towards Fort George. (Feb., pg. 51.)

Peace River to Fort Vermillion, Alta.—A press report states that an engineering party, under G. Murray, is in the field making surveys for a railway from Peace River to Fort Vermillion, and that the preliminary surveys for the line show a route northwesterly from Peace River to the big plateau, thence northerly to Battle River. There are several charters in existence under which such a line might be built, notably the Central Canada Ry., the Athabasca & Fort Vermillion Ry., and the Pacific, Peace River & Eastern Ry., but the report gives no indication as to which, if any, of them is interested.

St. Martins Ry.—The Board of Railway Commissioners has ordered the company to repair 10 bridges on the line, the work to be commenced by Apr. 1, and to be completed within 60 days thereafter. This line runs from Hampton, N.B., where connection is made with the Canadian Government Railways, Intercolonial Division, to St. Martins, 30 miles.

St. John & Quebec Ry.—A press report states that a contract has been let to the Nova Scotia Construction Co. for a section of this railway under construction from St. John to Andover, N.B., between Centreville, the present northerly terminus, and Andover, 26 miles. (Feb., pg. 51.)

Saskatchewan.—Replying to questions in the Saskatchewan Legislature, Feb. 7, the Premier said that "The government had no assurance that any of the railway companies will proceed with new construction work this year. It is likely a short mileage of rails will be laid where grade already exists, and it is possible some new grading will be undertaken during the forthcoming summer season."

Toronto Industrial Sidings.—Track laying is reported practically completed upon the industrial spur line being built in the Ashbridge Bay district by the Toronto Harbor Commissioners. It is 1.50 miles long and at present extends to the new steel plant site.

Railway Finance, Meetings, Etc.

Canadian Northern Western Ry.—Lazard Bros. & Co., London, Eng., announced recently that they would buy £200,000 of C.N.W.R. 4½% (Alberta) guaranteed 1st mortgage debenture stock, 1942, at 30½.

Canadian Northern Ry.—There has been filed with the Secretary of State at Ottawa a satisfaction of trust agreement, date Jan. 16, 1916, made between the C.N.R.Co. and the Central Trust Co. of New York, as trustee, securing an issue of 5% gold notes of the C.N.R.

New York Central Rd.—There has been deposited with the Secretary of State at Ottawa an agreement, dated Jan. 1, entered into between John Carstensen, A. T. Hardin and E. T. Rossiter, vendors, the Guaranty Trust Co., New York, and the N.Y.C.R., and a lease pursuant thereto, dated Jan. 20, Guaranty Trust Co., trustee, to the N.Y.C.R.

Atlantic, Quebec & Western Ry.—There has been deposited with the Secretary of State at Ottawa duplicate of an agreement dated at London, Eng., Dec. 20, 1916, between the company and E. B. Read and F. H. Jones, providing for the appointment of the latter as trustee for the bondholders under the trust deed of June 26, 1905, and all deeds supplemental to the same, in succession to the late G. Elliott.

Diamond Coal Co.—The Alberta Supreme Court has signed an order granting to the Trusts and Guarantee Co., provisional liquidators, the right to execute an option in favor of H. V. Hudson, Winnipeg, Man., upon the company's property and franchises. The price fixed in the option is $500,000. The company's property includes a 6 mile railway from Kipp, Alta., on the C.P.R., to Diamond City, and several miles of mine sidings.

Guelph Jct. Ry.—The statement for 1916 shows receipts from all sources of $42,961.20, an increase of $846 over the previous year. Four quarterly dividends of 6¼, 5¾, 5½ and 6⅝%, totalling 24⅛%, were paid during the year, which absorbed $41,012. The taxes were $800, and $1,000 was contributed to the Patriotic Fund. The receipts for the current quarter show considerable increase as compared with the same period last year. The line is owned by the City of Guelph, Ont., and is operated under agreement by the C.P.R. The board of management for the current year consists of: J. W. Lyon, President; Mayor Newstead, Vice President; A. H. MacDonald, Secretary; J. M. Taylor, H. C. Westby and D. H. Barlow, directors. T. F. Savage, heretofore in C.P.R. service, has been engaged as special agent, G.J.R., effective Mar. 1.

Railway Rolling Stock Notes.

The C.P.R. has ordered 75 automobile furniture cars to be built at its Angus shops, Montreal.

Canadian Government Railways have received 9 mikado locomotives from Canadian Locomotive Co.

The French Government is reported to have increased a recent order for 3,000 freight cars in the United States to 5,000.

The Eastern Car Co. has delivered 600 box cars and 100 coal cars to the Paris & Orleans Ry., completing the order of 2,000 cars. Descriptions of them have appeared in previous issues.

Canadian Car & Foundry Co. is reported to be figuring on an order for 44,000 steel cars for the French Government. It is said they will cost about $3,000 each.

Canadian Government Railways have received 118 box cars, 50 tons capacity, 1 steel snow plough, from Canadian Car & Foundry Co., and 10 mikado (2-8-2) locomotives from Canadian Locomotive Co.

The Midi Ry. of France is reported to have ordered 40 consolidation locomotives from American Locomotive Co. It is said they will be 161,000 lbs. total weight in working order, with 56 in. driving wheels and 23 by 26 in. cylinders.

The C.P.R. is reported to have offered to convert six of its standard sleeping cars into hospital cars on similar lines to those recently converted by Canadian Government Railways for the Military Hospitals Commission, for the transportation of wounded soldiers from the seaboard to their destinations.

With reference to the report that the Algoma Eastern Ry. was in the market for a number of steel hopper or gondola cars, mentioned in our last issue, we are officially advised that the type of car to be ordered has not been settled, and that until a decision has been reached as to a different method of handling ore than has obtained hitherto, they will not be ordered.

The Russian Government has ordered from the Eastern Car Co. 3,000 box cars of 1,200 poods capacity (approximately 43,200 lbs.). Of these 600 will have air brake and hand brake operated from the platform at one end of the car, and 2,400 will have air brake, but no hand brake or platform. Following are the chief details:

Length inside	22 ft. 9 ins.
Width inside	9 ft.
Height inside	7 ft. 8½ ins.
Gauge of track	5 ft.
Axles	2-5½ ins. by 10 ins.
Journal boxes arranged for pedestals	5½ ins. by 10 ins.
Journal bearings and wedges	M.C.B.
Wheels	Chilled cast iron
Brake beams and shoes	M.C.B.
Screw couplings, hooks and buffers	Russian standard
Door fixtures	Top hung type
Air brake, Russian Westinghouse type 8 by 12 ins.	
Roof, Russian type Galvanized iron, 22 s gauge	

The Minister of Railways stated in the House of Commons, Feb. 7, that rolling stock was being moved from the Intercolonial Ry. to the National Transcontinental Ry. and returned as traffic required. At the time of replying, there were 32 Intercolonial locomotives on the N.T.R. between Moncton and Winnipeg, and 4 N.T.R. locomotives on the I.R.C. The I.R.C. had sold 74 locomotives to the N.T.R. The N.T.R. east of Levis is equipped with 11 I.R.C. passenger cars. All passenger cars west of Quebec are owned by the N.T.R. There are 1,510 I.R.C. freight cars on the N.T.R. between Moncton and Winnipeg, and 1,085 N.T.R. freight cars on the I.R.C. The I.R.C. has sold 33 passenger cars and 174 freight cars to the N.T.R.

The chief details of the 40 consolidation locomotives, which the British Government has ordered through the Imperial Munitions Board, from Canadian Locomotive Co., for service in France, as mentioned in our last issue, are as follows:

Weight in working order on drivers	151,550 lbs.
Weight in working order, total	166,000 lbs
Wheel base of engine, rigid	15 ft. 3 ins.
Wheel base of engine, total	23 ft. 6 ins.
Wheel base, engine and tender	54 ft. 4 ins.
Heating surface, firebox	162 sq. ft.
Heating surface, tubes	1960 sq. ft.
Heating surface, total	2,122 sq. ft.
Driving wheels, diar.	56 ins.
Driving wheel centres	Main, cast steel; others, cast iron
Driving journals, diar. and length	Main 8½, others 8 by 12 ins.
Cylinders, diar. and stroke	21 by 28 ins.
Boiler, type	Straight top radial stay
Boiler pressure	200 lbs.
Tubes, no. and diar.	269-2 ins.
Tubes, length	14 ft.
Injectors	Locomotive type
Safety valves	Locomotive pop
Brakes	Westinghouse American with European couplings
Packing	Metallic
Weight of tender loaded	121,000 lbs.
Tank capacity	5,000 Imp. gals.
Coal capacity	10 tons
Tank, type	U shape
Truck, type	4 wheel arch bar
Truck wheel, diar.	33 ins.
Truck wheel, type	Steel tired, cast steel centres
Journal, diar. and length	5½ by 10 ins.
Brake beam	Steel trussed type

Canadian Government Railways have ordered 20 mikado (2-8-2) locomotives from Canadian Locomotive Co. They will be similar to the 30 ordered in May, 1916, which have been delivered. Following are the chief details:

Weight on drivers, in working order	213,500 lbs.
Weight in working order, total	283,000 lbs.
Wheel base, rigid	16 ft. 3 ins.
Wheel base, total	35 ft. 1 in.
Wheel base, engine and tender	68 ft.
Heating surface, firebox	242 sq. ft.
Heating surface, tubes	3,398 sq. ft.
Heating surface, total	3,640 sq. ft.
Grate area	56.6 sq. ft.
Driving wheels, diam.	63 ins.
Driving wheel centres	Cast steel
Driving journals	Main, 11 x 20 ins.; others 10 x 12 ins.
Cylinders, diar. and stroke	27 by 30 ins.
Boiler, type	Extended wagon top, radial stay
Boiler pressure	180 lbs.
Tubes, no. and diar.	240 2 ins.; 32 5¾ ins.
Tubes, length	20 ft.
Brakes	Westinghouse American
Superheater	Locomotive Superheater Co., Type A
Rear frame	Cradle type
Trailing truck	Radial type with side bearings
Cab	Steel with vestibule
Weight of tender loaded	166,000 lbs.
Tank capacity	9,000 U.S. gals.
Tank, type	Water bottom with vestibule connection
Coal capacity	12 tons
Truck, type	Pedestal, equalized
Truck wheels, diar.	34 ins.
Wheel, type	Steel tired, retaining ring, cast steel centres
Journals	M.C.B. 6 by 11 ins.
Brake beam	High speed with M.C.B. heads

The Persian Gulf & Mesopotamia Development Co. is asking prices, etc., for delivery in instalments between Sept., 1917, and 1921, for the following rolling stock and equipment: 313 passenger locomotives, 863 freight locomotives, 78 locomotives for mixed service, 4 saloon and state cars, 85 reserved carriages, 11 dining cars, 75 first class cars, 145 composite first and second class cars, 152 composite first, second and third class cars, 45 other cars, 57 second class cars, 126 intermediate class cars, 221 composite, intermediate and third class cars, 50 0third class cars, without brakes, 653 third class ambulance cars, 17 third class ambulance cars with brakes, 80 third class and postal cars, 318 passenger brake vans, 19 brake vans with postal compartment, 4 postal vans, 54 car brakes, 150 horse boxes, 44 baggage vans, 164 miscellaneous cars, 18 stores vans, 12,282 covered freight cars, 2,578 high sided freight cars, 553 low side freight cars, 8 cattle cars, 12 platform cars, 64 powder cars, 242 timber cars, 267 bolster trucks, 240 ballast cars, 399 brake vans (all uses), 92 oil tanks, 79 water tanks, 35 gas holders, 68 cranes, 232,000 tons of 65 lb. steel rail, 4,000,000 creosoted pine ties. The line for which this equipment is required is being surveyed from Bagdad southeasterly, and the equipment is for use in India westerly to meet the line from Bagdad.

The Quebec and Saguenay Railway Purchase.

The Minister of Railways stated in the House of Commons Jan. 31 that an agreement had been entered into on July 25, 1916, pursuant to chap. 22, statutes of 1916, between the Government and the Quebec & Saguenay Ry. Co., and it had already been laid on the table. The price to be paid for the railway is to be fixed by the Court of Exchequer in accordance with the terms of the statute. The railway is being completed by the company under the conditions set out by order in council.

The Hon. R. Lemieux, M.P. for Rouville, asked in the House of Commons, Feb. 5, whether in view of the Exchequer Court's judgment, given a few days previously, the government intended to implement the legislation of 1915 concerning the Q. & S.R. The Minister of Railways replied in the affirmative.

It was reported from Ottawa Feb. 7 that shortly after the reassembling of Parliament in April the government will introduce a bill supplementary to chap. 22 of 1916 respecting the purchase of the railway. It is stated that the measure will make it clear that the subsidies paid by the Dominion Government will be deducted from the purchase price, and that the basis of purchase will be definitely outlined in connection with certain issues which have been raised on the judgment given in the Court of Exchequer recently.

A Railway's Liability for Accident on a Privilege Pass.—The C.P.R. appealed recently against the Supreme Court judgment affirming a Court of King's Bench decision in connection with the death of a stockman through accident on the C.P.R., while he was travelling on a reduced fare ticket, with cattle. Lord Haldane held that the man had, by signing a railway pass at reduced rates, bound himself to renounce what would otherwise have been his rights, and thus relieved the railway company effectually from all liability for damages; and also that the C.P.R. did enough to discharge the obligation to enable the man to know what he signed the pass for. The appeal was upheld, the judgment of the Canadian courts reversed, and the action dismissed.

National Transcontinental Ry. Yard at Fitzpatrick.—The Minister of Railways stated in the House of Commons recently that the land for the railway yard at Fitzpatrick, Que., was expropriated from the Quebec & Lake St. John Ry., and that the price agreed to be paid is $100 an acre. The yard was located at Fitzpatrick, instead of La Tuque, on account of the grade.

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NOTICE TO ADVERTISERS.

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Change in Rules for Inspection, Etc. of Locomotive Boilers.

The Board of Railway Commissioners passed general order 178, Jan. 23, as follows:—The Rules and Instruction for Inspection and Testing of Locomotive Boilers and their Appurtenances, as set out in general order 78, July 14, 1911, and Circular 140, Jan. 22, 1915, and re the C.P.R.'s application for an extension of time for the external inspection of locomotive boilers. Upon reading what is filed in support of the application, and the report of the Chief Operating Officer of the Board; and it appearing desirable to consolidate the supplemental regulations in the above mentioned matter issued since the issue of general order 78, it is ordered that, in the case of locomotives which are out of service in good condition for one or more full months, the times for making the following inspections and tests, namely, (a) removal of flues and interior inspection of boiler, (b) removal of lagging and exterior inspection of boiler, (c) hydrostatic test, and (d) removal of caps and inspection of flexible staybolts, as provided by paragraphs 5, 11, 12 and 18 of general order 78, may be extended by the railway companies, without making application therefor, for a number of months equivalent to the number of continuous months during which any such locomotive shall be out of service; provided that such inspections and tests shall in no case be performed less frequently than as hereinafter set forth:

(a) Removal of flues and inspection of interior of boiler once at least in every 48 consecutive months. (b) Removal of jacket and lagging and inspection of exterior of boiler once at least in every 69 consecutive months. (c) Hydrostatic tests once at least in every 24 consecutive months. (d) Removal of caps and inspection of flexible staybolts once at least in every 30 consecutive months. And it is further ordered that the time during which any such locomotive is out of service be properly covered by "out of service" reports and a notation made on the back of inspection reports and cab cards showing the months out of service on account of which time has been extended, that no extension of time be permitted for any period less than a full month, and that if a locomotive be out of service when any of the above inspections and tests become due, such inspection and test need not be performed until just prior to the time when such locomotive shall be returned to service.

A New Russian Line.—A press report says that M. Albert, of Prince Rupert, B.C., had arranged the financing in Vancouver and western cities for the building of a large mileage of railways in Russia for the government. He left for Vladivostock, Siberia, at the end of January. In an interview before he left, he is reported to have said that 700,000,000 ft. of timber would be required for ties, bridges and other work on the lines, all of which would be secured in Russian territory. This report should not be taken seriously unless confirmed.

Coal for Canadian Government Railways.—The Minister of Railways stated in the House of Commons recently that 553,856 tons of coal had been purchased in the United States for the Canadian Government Railways during the current financial year. The price per ton varied from $2.51 for slack coal, delivered at Fort William, Ont., to $10.23 a ton, delivered at Halifax, N.S.

C.P.R. Floral Department's Work.

The C. P. R.'s Floral Committee has issued a circular to station agents, section foremen and others concerned as follows:—"With the object of establishing permanent gardens throughout the system, it has been decided to supply perrenial plants on request. These flowering plants remain alive in the ground through severe winters, and most of them bloom early in spring. As these plants do not flower much the first year after planting, the company will also furnish annual seeds this spring as usual. Directions for planting will accompany each shipment and the stock should be planted immediately it is received. At many points gardens do not exist, and it is suggested that a piece of ground be prepared and planted this spring. A plot 30 to 40 ft. long, and 4 to 5 ft. wide, is nearly always available. Many agents already have flower beds immediately adjoining stations, and section foremen have them on each side of the path from section houses to track, while others have very nice beds alongside section and tool houses. The earth for planting should be deeply spaded, and, if soil is sandy or poor, well rotted manure should be dug in. In addition to the plants mentioned, a perrenial native hop for planting around outdoor closets can be supplied. Six of these should be enough for any one place. As perennial plants are now to be used, it will no longer be necessary to provide bulbs for fall planting, with possible exceptions. Bulbs that are in the ground at present should be dug up after the plants have died, sorted over, and the good ones used in the fall of 1917 and possibly 1918, by which time the perennials should have made a good display. Bulbs that are kept over for future planting should be packed in paper bags and kept in a dry cool place. Please state your requirements on the perforated leaflet attached, and send as quickly as possible to your superintendent.

"PERENNIAL PLANTS.—A suitable collection for the average garden should include approximately five of each of the following plants:—Achillea, Campanula, Sweet William, Larkspur, Columbine, Icelandic Poppy, Pinks or Dianthus, Gaillardia, Bleeding Heart, Paeony, Phlox, Golden Glow, Native Hop.

"ANNUAL SEEDS.—Standard packet containing Sweet Peas, Nasturtiums, Zinnias, Mignonette and Candy Tuft."

The sheet containing the list of plants gives the colors, height and other characteristics.

G.T.R. Taxation in Michigan.—An amendment to the constitution of the State of Michigan has been introduced into the Legislature to permit it to own and operate railways. The reason for this is said to be a question of taxes between the government and the G.T.R. The dispute is said to date back to 1834, when the Detroit & Pontiac Ry., now part of the G.T.R., was built. The capital stock of the company was $2,500,000, on which the annual tax of $25,000 has been paid. The capital stock has never been increased, while the basis of taxation for other railways is valuation.

C.N.R. and G.T.P.R. Audits.—To provide for the making of a continuous audit of the revenues and expenditures of the Canadian Northern and Grand Trunk Pacific Railways, $10,000 has been placed in the Dominion estimates for the current year. A vote of one-quarter of this amount was agreed to in the House of Commons, Feb. 1.

Canadian Northern Railway Construction, Betterments, Etc.

Mount Royal Tunnel & Terminal Co.—Work is reported to have been started upon the temporary station at Lagauchchere St., Montreal, by Norcross Bros., who expect to have it ready for occupation within six months.

Toronto-Hamilton-Niagara Line. — Sir Wm. Mackenzie is reported as stating that construction work will be started at an early date on the line from Toronto, via Hamilton to Niagara Falls, Ont. Sir Donald Mann is also reported as saying that financial arrangements have been completed ready for an immediate commencement of construction following official approval of the route plans.

Canadian Northern Ontario Ry.—The residents of Norway Bay, near Ottawa, have asked the Board of Railway Commissioners to settle the question of the location of a station there. Three sites have been suggested, each of which is strongly advocated by special interests.

Port Arthur Entrance.—The question of the C.N.R. entrance into Port Arthur, Ont., from the east, is being discussed, L. C. Fritch, General Manager, Eastern Lines, having met the city council recently to see if a settlement can be reached. At present the company connects with its Western Lines over C.P.R. tracks.

Canadian Northern Ry.—A contract is reported to have been let for building a new locomotive house at Rainy River, Ont.

The Alberta Minister of Railways reports that during 1916 the branch line from Oliver towards St. Paul de Metis was graded for 100 miles, and 8 miles of steel had been laid up to Dec. 31. The C.N.R. advised Canadian Railway and Marine World in January that no new track had been laid on its Western Lines during that year. A press report from Edmonton, Jan. 30, said 4 miles of steel had been laid out of Oliver towards St. Paul de Metis up to Jan. 27. The first break in the track laying on the line will occur at the crossing of Sturgeon River, mileage 17.06 from Oliver, where a bridge 200 ft. long will have to be erected. The central span will be of steel, 57 ft. long and 55 ft. above high water mark, the approaches being of trestle work. It is expected the bridge will take about six weeks to put up. It is the largest bridge structure on the hundred miles of line, which is expected to be completed this season.

Canadian Northern Pacific Ry.—All the machinery for the company's car plant at Port Mann, was reported to have been delivered Feb. 6, and rapid progress was being made with its installation. It is expected that the plant will be ready for operation by Mar. 31.

The British Columbia Minister of Railways stated Feb. 1 that the company would shortly operate a train service on the Steveston Branch, which starts from the B. C. Electric Ry., about two miles from New Westminster, or C.N.P.R. mileage 5.41 from New Westminster bridge, and runs to Steveston, about 12 miles. To connect this line with the rest of the C.N.P.R. involves the building of a bridge across the North Arm of the Fraser River. The line has never been operated. M. H. MacLeod, General Manager and Chief Engineer, inspected it Jan. 30, and made arrangements for putting it in order, and for the operation of one train a day each way.

Plans for the location of the company's tracks through New Westminster have been officially approved by the company's officers, and were sent to the Mayor, Feb. 5. The plans have to be approved by the C.P.R., and the work to be done to carry them out includes the moving of the C.P.R. tracks and locomotive house at Columbia St. The B. C. Electric Ry. is also interested, as its tracks are to be moved to a new location. The C.N.P.R. station will be located on the site of the old Royal City Hotel.

R. B. Pratt, architect for the C.N.R. terminal station on the False Creek flats, Vancouver, is reported as stating that good progress has been made with the piling for the foundation of the station, a start has been made with the concrete work, and a considerable quantity of cut stone for the base course has been delivered. Under the agreement with the city, the building has to be completed by the end of the year.

There appear to be considerable differences between the company and the Vancouver City Council as to the progress being made on the False Creek reclamation and other works, and a good deal of speculation as to whether they will be carried out on time or not. On a recent visit to the city, M. H. MacLeod, General Manager and Chief Engineer, is reported to have said: "I do not mind criticism, but I do dislike unfair criticism. We have 300 men working steadily; the other day by actual count there were 281, and another gang was subsequently put on. I sometimes wonder if the members of the city council realize just what work we are doing, and if they give us credit for what we are really trying to do. We ought to know our business, and I want to tell you that we have made a contract with all the contractors working for us that the various works be completed on time, according to our agreement. There need be no fear that the freight terminals will not be finished by June nor the station by Jan. 1. We are just as anxious as anyone else to live up to our agreement and are straining every effort to do so. I sometimes wonder if the people who appear so anxious to criticize the company ever get right down to it and see what work we are really doing in Vancouver. It means more to us than anyone else to have all the work here completed on contract time and we hope to be able to accomplish this despite the many adverse conditions that have confronted us."

At a meeting of the City Council, held Jan. 31, the following resolution was passed:—"That the City Solicitor, with the assistance of the City Engineer and the chairman of the railways and bridges committee, be instructed to prepare and present a petition to the Minister of Railways of British Columbia, requesting that the City of Vancouver be given an opportunity to lay before the Lieutenant-Governor-in-council, in accordance with clause 41 of the agreement, its various complaints as regards the conduct of the C.N.R. in connection with the agreement existing between the company and the city; the petition to clearly point out that the city's main object is to obviate the possibility of any further delay in commencing the various works included in the agreement, and to guarantee the completion of said works on or before the date set out in the agreement."

Vancouver Island.—The subway on Burnside Ave., Victoria, on the line to Patricia Bay, is well advanced to completion. When this is finished it will be possible to operate the line into Victoria, and enable material to be brought in for track laying and general construction purposes on the line to Alberni. The company has 10 miles of track laying on the mainland for this purpose, but it has no more in sight. The roadbed is completed from near Victoria to within a few miles of Alberni, about 136.5 miles. (Feb., pg. 64.)

City Bridges and Subways.

Following are extracts from the Toronto City Commissioner of Works' interim report for the 11 months ended Nov. 30, 1916:

Mount Pleasant Road Bridge.—The construction of a 3 span reinforced concrete bridge over the old belt line, G.T.R., was begun in Mar., 1916, by C. J. Townsend, contractor. The piers and abutments are nearly complete and the substructure portion of the wooden trestle forming a part of the north approach is complete with the exception of 2 bents.

Strachan Ave. Bridge, over C.P.R. — The contract for the construction of the concrete abutments awarded in 1915 to Roderick Campbell was cancelled and a new contract was awarded to C. J. Townsend in May, 1916. Work was begun on May 20, 1916, and 980 cu. yds. of concrete have been placed in the south abutment and 109 in the north abutment.

Ashdale Ave. Subway. — Complete plans and specification have been prepared for the construction of a pedestrian subway under the G.T.R. on the line of Ashdale Ave. This subway is intended to provide a means of communication between Monarch Park and the area located north and south of the G.T.R. right of way.

Free Transportation for Legislators.—The Revised Statutes of Canada, chap. 37, sec. 343, provides that railway companies shall furnish free transportation upon any of their trains for members of the Senate and House of Commons, with their baggage, and also for the Board of Railway Commissioners and such of the board's officers and staff as the board may determine, with their baggage and equipment, and shall also, when required, haul free of charge any car provided for the board's use. G. E. McCraney, M.P. for Saskatoon, introduced recently in the House of Commons a bill providing that similar free transportation shall be given to the members of the executive councils of the various provinces, and, within the provinces in which they reside respectively, to members of the legislative councils and legislative assemblies.

Canadian Society of Civil Engineers, Saskatchewan Branch.—Following the organization meetings mentioned in our last issue, this branch of the Canadian Society of Civil Engineers has been formed at Regina, to include all members of the society residing in the province. Nominations for the various offices have been made, for submission to letter ballot, as follows: L. A. Thornton, Regina, Chairman; G. D. Mackie, Moose Jaw, Vice Chairman; H. S. Carpenter, E. G. Montgomery, Regina; T. C. McNabb, Moose Jaw; Prof. A. R. Greig, C. J. Yorath, Saskatoon, executive committee; and J. N. deStein, Regina, Secretary Treasurer.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Buffalo, Rochester & Pittsburg Ry.—P. A. BOLOPUE, heretofore chief clerk, local freight agent's office, Pittsburg, Pa., has been appointed Canadian Agent, in charge of Freight and Passenger Departments. Office, Toronto.

Canada Steamship Lines, Ltd.—H. J. DICK, heretofore accountant, has been appointed acting General Agent, Kingston, Ont., vice E. E. Horsey, resigned.

Canadian Government Railways.—R. H. SMITH, Resident Engineer, Halifax Ocean Terminals, Halifax, N.S., has had his jurisdiction extended to include District 3, Intercolonial Division,. L. S. LANDERS, heretofore Resident Engineer, District 3, having been appointed Assistant Engineer, Levis, Que., as announced in our last issue.

R. MONTGOMERIE, heretofore transit man, Halifax Ocean Terminals, Halifax, N.S., has been appointed Resident Engineer, District 4, Intercolonial Division, New Glasgow, N.S., vice A. H. Jones, promoted.

JOHN GALLIVAN, heretofore locomotive man, Stellarton, N.S., has been appointed travelling fireman, District 4, Intercolonial Division. Headquarters, Stellarton, N.S. This is a new position.

A. H. JONES, heretofore Resident Engineer, District 4, Intercolonial Division, New Glasgow, N.S., has been appointed Assistant Engineer, Moncton, N.B.

J. E. LONG, Safety Engineer, has also assumed the duties of Secretary, C.G.R. Centre, St. John Ambulance Association, vice W. C. Paver, who has been relieved of the duties of that office on account of ill health. Office, Moncton, N.B.

W. H. TOUT has been appointed First Aid Instructor and Safety Inspector, lines east of Campbellton and Edmundston, N.B. Headquarters, Moncton, N.B.

T. W. McBEATH, heretofore locomotive man, Moncton, N.B., has been appointed travelling fireman, District 3, Intercolonial Division. Headquarters, Moncton, N.B. This is a new position.

A. R. MACGOWAN, A.M.Can.Soc.C.E., heretofore Principal Assistant Engineer, Moncton, N.B., has been appointed Superintendent, District 5, Intercolonial Division, vice H. B. Fleming, assigned to other duties. Office, Edmundston, N.B.

H. B. FLEMING, heretofore Superintendent, District 5, Intercolonial Division, Edmundston, N.B., has been appointed Chief Dispatcher there.

JOHN FRASER, heretofore charge hand, Sydney, N.S., has been appointed Locomotive Foreman, Edmundston, N.B., vice C. White, transferred.

C. WHITE, heretofore Locomotive Foreman, Edmundston, N.B., has been appointed Locomotive Foreman, Napadogan, N.B., vice W. C. Williams, who has been given work as a stationary boiler fireman.

P. P. BEGIN has been appointed First Aid Instructor and Safety Inspector, lines from Campbellton, N.B., to Montreal, and from Edmundston, N.B., to O'Brien Que. Headquarters, Riviere du Loup, Que.

H. A. IRVING, heretofore acting Trainmaster, District 3, Transcontinental Division, Graham, Ont., has been appointed Trainmaster, Cochrane, Ont.

H. MITCHINSON has been appointed First Aid Instructor and Safety Inspector, lines from O'Brien, Que., to Winnipeg, and from Superior Jct. to Fort William, Ont. Headquarters, Transcona, Man.

Canadian Northern Ry.—A. J. HILLS, formerly General Superintendent, Eastern Lines, and latterly attached to the Third Vice President's office, has been appointed Assistant to the Executive. Office, Toronto.

GUY TOMBS, heretofore General Freight Agent, Lines east of Port Arthur, Ont., Montreal, has been appointed Assistant Freight Traffic Manager, Lines east of Port Arthur. Office, Montreal.

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Guy Tombs,
Assistant Freight Traffic Manager, Lines east of Port Arthur, Ont., Canadian Northern Railway.

JAMES ORR, heretofore Assistant to the General Traffic Manager, Toronto, has been appointed General Freight Agent, Lines east of Port Arthur, Ont., vice Guy Tombs, promoted. Office, Montreal.

In anticipation of the industrial reorganization and development which will follow the conclusion of peace, and in view of the great number of industrial opportunities on the company's system, its operations in that regard have been extended by the creation of a Department of Resources. D. F. COYLE, heretofore Secretary to R. J. Mackenzie, of Mackenzie, Mann & Co., Ltd., at Winnipeg, has been appointed administrator of this work, with the title of Industrial Commissioner. As the aim of the department is to locate industries and to develop natural resources along the company's lines, it is confidently expected that the municipal authorities will cooperate with him in his work. Office, Winnipeg.

E. LANGHAM, heretofore Purchasing Agent, Lines West of Port Arthur, Winnipeg, has been appointed General Purchasing Agent for the system, and the position hitherto held by him, and that of Purchasing Agent, Eastern Lines, Toronto, hitherto held by L. W. MITCHELL, have been abolished, Mr. Mitchell retaining his other position as Treasurer. Office, Toronto.

P. MOONEY, heretofore Division Freight and Passenger Agent, Halifax & Southwestern Ry., Halifax, N.S., has been appointed Assistant General Freight Agent, Lines east of Port Arthur, Ont. Office, Toronto.

R. J. KELLY, heretofore Trainmaster, Hornepayne, Ont., has been appointed Trainmaster, Capreol, Ont.

J. B. SMITH, heretofore Trainmaster, Capreol, Ont., has been appointed Trainmaster, Hornepayne, Ont., vice R. J. Kelly, transferred.

M. B. HELSTON, heretofore Superintendent, Duluth, Winnipeg & Pacific Ry., Virginia, Minn., has been appointed Superintendent, District 4, Western Division, Quebec District, Farnham.
ed Manager, Winnipeg Joint Terminals. Office, Calgary, Alta.

A. AVERY, heretofore station agent, Arcola, Sask., has been appointed Livestock Agent, Winnipeg, vice J. T. Whitlaw, whose appointment as station agent, Calgary, Alta., was announced in our last issue.

O. A. THOMAS, heretofore Station Ticket Agent, Calgary, Alta., has been appointed Local Freight Agent, Calgary, Alta.

A. R. McDOUGALL, heretofore ticket clerk, Calgary, Alta., has been appointed Station Ticket Agent there, vice, O. A. Thomas, transferred.

J. S. DONAL has been appointed Travelling Agent, New York, vice J. L. Lounsbery, resigned.

Canadian Pacific Ry.—ALLAN PURVIS, General Superintendent, Quebec District, Montreal, having resumed duty, after having been temporarily acting as General Superintendent, Ontario District, Toronto, J. H. BOYLE, who was acting in his absence, has resumed his duties as Superintendent, Farnham Division, Quebec District, Farnahm.

H. J. HUMPHREY, heretofore Superintendent, Farnham Division, Quebec District, Farnham, has been appointed acting Superintendent, Laurentian Division, Quebec District, vice R. McKillop, who has enlisted for overseas service. Office, Montreal.

G. BOWLER, heretofore Night Yardmaster, Sortin Yard, has been appointed Trainmaster, Montreal Terminal Division, Quebec District.

J. WOODMAN, heretofore Superintendent, Winnipeg Terminal Division, Manitoba District, has been appointed Superintendent, Montreal Terminals Division, Quebec District, vice C. J. Kavanagh, transferred. Office, Outremont, Quebec.

J. T. ARUNDEL, General Superintendent, Ontario District, Toronto, having resumed duty after leave of absence due to illness, ALLAN PURVIS, General Superintendent, Quebec District, who was acting in his absence, has resumed his duties at Montreal.

T. H. HAMILTON, heretofore Master Mechanic, Trenton Division, Ontario District, Trenton, has been appointed Assistant Superintendent, Trenton Division, Ontario District, vice E. J. Melrose, transferred. Office, Havelock.

A. H. BINNS has been appointed acting Master Mechanic, Trenton Division,

Ontario District, vice T. H. Hamilton, transferred temporarily. Office, Trenton.

W. GARLAND, heretofore Yardmaster, Montreal, has been appointed Assistant Superintendent, Toronto Terminals Division, Ontario District, in charge of day operation. Office, Toronto.

J. MILES, heretofore Yardmaster, Toronto, has been appointed Assistant Superintendent, Toronto Terminal Division, Ontario District, in charge of night operation. Office, Toronto.

E. J. MELROSE, heretofore Assistant Superintendent, Trenton Division, Ontario District, Trenton, has been appointed acting Assistant Superintendent, London Division, Ontario District, vice W. Tansley, whose appointment as acting Superintendent of that division was announced in our last issue.

J. L. JAMIESON, heretofore Road Foreman of Locomotives, Medicine Hat, Alta., has been appointed Trainmaster, Kenora Division, Manitoba District, vice R. W. D. Harris, transferred. Office, Ignace, Ont.

A. F. HAWKINS has been appointed Superintendent, Fort William Terminal Division, Manitoba District, vice R. C. Morgan, transferred. Office, Fort William, Ont.

R. C. MORGAN, heretofore Superintendent, Fort William Terminal Division, Manitoba District, Fort William, Ont., has been appointed Superintendent, Winnipeg Terminal Division, Manitoba District.

J. H. CHOWN, heretofore Trainmaster, Moose Jaw Division, Saskatchewan District, Moose Jaw, has been appointed Superintendent, Regina Division, Saskatchewan District, vice J. K. Savage, whose appointment as Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont., was announced in our last issue. Office, Regina.

J. M. McKAY, heretofore Superintendent, Revelstoke Division, British Columbia District, Revelstoke, has been appointed Superintendent, Saskatoon Division, Saskatchewan District, vice E. W. DuVal, who is taking an officer's training course for overseas service.

R. W. D. HARRIS, heretofore Trainmaster, Kenora Division, Manitoba District, Ignace, Ont., has been appointed Trainmaster, Moose Jaw Division, Saskatchewan District, vice J. H. Chown, promoted. Office, Moose Jaw.

D. J. ENGLAND, heretofore Trainmaster, Calgary, Alta., has been appointed Terminal Trainmaster, Moose Jaw, vice A. F. Hawkins, promoted.

M. E. COLLINS, heretofore accountant, Lethbridge, Alta., has been appointed chief clerk to Superintendent, Lethbridge Division, Alberta District, Lethbridge.

E. GIBBONS, heretofore at Calgary, Alta., has been appointed accountant, Lethbridge, Alta., vice M. E. Collins promoted.

G. PRATT, heretofore Locomotive Foreman, Strathcona, Alta., has been appointed Locomotive Foreman, Medicine Hat, Alta., vice J. Perry assigned to other duties.

J. McGOWAN, heretofore Locomotive Foreman, Rogers Pass, B.C., has been appointed Locomotive Foreman, Strathcona, Alta., vice G. Pratt transferred. The position of Locomotive Foreman at Rogers Pass has been abolished, owing to the placing in operation of the Connaught Tunnel.

T. C. McNAB, heretofore Division Engineer, Saskatchewan District, Moose Jaw, has been appointed Superintendent, Revelstoke Division, British Columbia District, vice J. M. McKay, transferred. Office, Revelstoke.

G. DELACHEROIS, heretofore Resident Engineer, Regina, Sask., has been appointed Roadmaster, Shuswap East and Okanagan Subdivisions, British Columbia District. Office, Revelstoke.

DOUGLAS BROWN, heretofore master of the s.s. Princess Mary, British Columbia Coast Service, C.P.R., has been appointed Superintendent, British Columbia Lake and River Service, vice J. C. Gore, deceased. Office, Nelson, B.C.

J. D. MUIR, heretofore Locomotive Foreman, Winnipeg, has been appointed General Foreman, Locomotive Shops, Vancouver, B.C., vice G. H. Reed superannuated.

A. R. KENYON, heretofore excursion and rate clerk, Boston and Maine Rd., Boston, Mass., has been appointed Travelling Passenger Agent, Boston District, C.P.R. Office, 332 Washington St., Boston, Mass.

W. E. ELLIS, heretofore ticket clerk, New York Central Rd., New York, has been appointed Travelling Passenger Agent, C.P.R., in New York territory, vice E. G. Chesbrough promoted. Office, New York.

E. G. CHESBROUGH, heretofore Travelling Passenger Agent, New York, has been appointed General Agent, Passenger Department, Atlanta, Ga. Office, Healey Building.

Delaware and Hudson Co.—J. T. LOREE has been appointed General Manager. Office, Albany, N.Y.

The position of Assistant General Superintendent of Transportation having been abolished, J. A. McGREW has resumed his former position as Superintendent, Saratoga and Champlain Divisions, Albany, N.Y.

M. F. LEAMY, heretofore acting Superintendent, Saratoga and Champlain Divisions, has resumed his former duties as Trainmaster, Saratoga Division, and F. R. GRIFFIN, heretofore acting Trainmaster, has resumed his former duties as Assistant Trainmaster, Saratoga Division.

Grand Trunk Ry.—J. E. DUVAL, heretofore General Superintendent of Car Service, has been appointed General Superintendent of Transportation. Office, Montreal. This is a new position.

G. HICKEY, heretofore Foreman, Boiler Shop, Toronto, has been appointed General Foreman there, vice E. Logan, resigned.

J. T. DEWSBURY has been appointed acting Locomotive Foreman, Niagara Falls, Ont., vice W. H. Wensley, on leave of absence through illness.

C. KELSO, heretofore Contract Inspector, Motive Power Department, Stratford, Ont., has been appointed Master Mechanic, Stratford Shops, vice R. Patterson resigned. Office, Stratford, Ont.

JOHN B. LIVINGSTON, heretofore Chief Clerk, Motive Power Department, Battle Creek, Mich., has been appointed Storekeeper, Western Lines, vice J. R. Crowell deceased. Office, Battle Creek, Mich.

Grand Trunk Pacific Ry.—The position of Travelling Freight and Passenger Agent at Juneau, Alaska, hitherto held by J. D. McAULEY, now Commercial Agent, Prince Rupert, B.C., has been abolished.

Halifax and South Western Ry.—HUGH DUNBRACK has been appointed City Passenger Agent, Halifax, N.S., vice A. Hector.

W. A. CUNNINGHAM has been appointed Division Freight and Passenger Agent, vice P. Mooney, transferred to C. N. R. service. Office, 123 Hollis St., Halifax, N.S.

Pere Marquette Rd.—G. B. BIRD has been appointed Auditor of Disbursements, vice H. G. Meyers, assigned to other duties. Office, Detroit, Mich.

W. L. KELLOG, heretofore Superintendent of Motive Power, Missouri, Kansas and Texas Rd., Dennison, Tex., has been appointed Superintendent of Motive Power, P.M.R., vice J. J. Walters, resigned to enter another company's service. Office, Detroit, Mich.

Reid Newfoundland Co.—J. P POWELL, heretofore chief of the Engineering Department, has been appointed Assistant General Superintendent. Office, St. John's, Nfld.

Wabash Ry.—T. J. JONES, heretofore Superintendent Transportation, has been appointed General Superintendent in charge of station, yard and train service, St. Louis, Mo.

M. B. CASEY has been appointed Superintendent Transportation, vice T. J. Jones, promoted. He reports to the General Manager, and has charge of all matters pertaining to freight and passenger car handling and movements, including per diem, demurrage, passenger and freight train schedules, and makes and distributes to the proper officers, morning reports relating to train movements, yard and car situations. Office, St. Louis, Mo.

Winnipeg Joint Terminals.—M. B. MURPHY, heretofore Superintendent, District 4, Western Division, Canadian Northern Ry., Calgary, Alta., has been appointed Manager, Winnipeg Joint Terminals, C.N.R., Canadian Government Railways, and Grand Trunk Pacific Ry. Railways, and Grand Trunk Pacific Ry., vice R. J. Hunt, resigned.

Engineers' Residences on National Transcontinental Ry.—The Minister of Railways stated in the House of Commons recently that the average cost of each set of civil engineer's residences, during the construction of the N.T.R., between La Tuque and Parent, was $1,450.

A conference of city managers of the Grand Trunk Pacific Telegraph Co. was held at Edmonton, Alta., Feb. 12 and 13, at which many matters pertaining to increasing efficiency of the service were discussed. Those present were: H. Hulatt, Manager of Telegraphs, Montreal; W. J. Rooney, Division Superintendent of Telegraphs, Edmonton; F. T. Caldwell, Division Superintendent of Telegraphs, Winnipeg; S. Hutchinson, Circuit Manager, Winnipeg; S. Robertson, Electrical Engineer, Edmonton; E. H. Hiscock, Electrical Engineer, Winnipeg; R. M. MacMillan, City Manager, Edmonton; R. M. Hicks, City Manager, Winnipeg; Geo. Jackson, City Manager, Regina; J. E. Grace, City Manager, Saskatoon; Geo. Moore, City Manager, Calgary; G. B. Brien, City Manager, Prince Rupert; J. E. Lalonde, City Manager, Prince George; C. A. Radford, Chief Operator, Edmonton; J. O. Pilon, accountant, Edmonton; N. B. Walton, Superintendent, Operating Department, G.T.P.R., and L. V. Druce, Division Freight Agent, G. T. P. R., were present as guests and addressed the meeting. On the first evening the officials attended a theatre as guests of Division Superintendent Rooney and the following evening they were entertained at dinner by H Hulatt, Manager of Telegraphs.

Extension of C.P.R. Dock Facilities at Vancouver.

The steady growth of coastwise and trans-Pacific freight and passenger traffic has made necessary an increase in the C.P.R. dock facilities at Vancouver.

In accordance with a carefully considered plan to meet the needs of the present traffic and to provide for a development which will serve the interests of the port to the best advantage, an extension to Pier D, at the foot of Granville St., has been undertaken.

The present Pier D was built in 1913, and is approximately 400 ft. long and 150 ft. wide. The proposed extension will carry the pier to the harbor line, and will be approximately 600 ft. long on the east side, 500 ft. long on the west side, and about 160 ft. wide. The dimensions of the completed pier will therefore be about 950 ft. long by 160 ft. wide.

A fill has been made on the site of the extension, aggregating about 250,000 cu. yds. of material. This has been obtained from dredging in and around the harbor. It was made necessary by the extreme depths of mud and water.

The substructure of the pier will be built of creosoted wooden piles, treated by the boiling process, under strict specifications, to assure sound piles and uniform depth of penetration, 15 lbs. creosote to the cu. ft. to be used. The piling will be long and heavy, involving about 3,000 piles, some of which may run to 125 ft. long. These will be furnished by the Vancouver Creosoting Co., whose new plant at North Vancouver was started about Jan. 1. The creosoted piles are assembled at that plant, sorted and towed to a receiving boom located conveniently to the work. The boom will store approximately 200 piles.

Pile driving will be done by steam hammer. A subcontract for the driving has been given to S. Doe, of Victoria. Owing to the pile lengths the driver leads will be approximately 125 ft. high, making the driver one of the largest, if not the largest, in the world.

The caps, bracing, stringers and flooring of the pier will be creosoted lumber, furnished by local mills and creosoted by the Dominion Creosoting Co., Vancouver. The decking will be a 2 x 4 laminated structure, surfaced with a flooring of Australian hardwood.

A one-story shed will be built on the new portion, connecting with the shed on the existing pier. The shed construction will be wooden frame, with wooden roof trusses and a built up roof laid on laminated roof timbers. The trusses will be spaced 20 ft. on centres, with columns dividing the pier into 2 side bays, each 27 ft. wide, and 2 centre bays, 36 and 46 ft. wide respectively. The sides will be provided with sliding doors, those on the east side being continuous.

A depressed railway track will be continued down the centre of the pier to about 100 ft. from the end and another track will be laid along the outside edge of the east side of the pier. This will necessitate adding approximately 10 ft. to the width of the present structure.

Elevators will be installed for the rapid handling of freight, and an oil line for the fuel supply of some of the steamships.

An electrically driven car-haul will be put in to move cars while on the pier and so dispense with steam locomotive operation and its attendant fire risks. To minimize further the fire hazard, a fire protection system will be installed, as also such power and light circuits as may be needed.

An outside promenade will be built on both sides of the roof, for the handling of passenger traffic to and from the end of the pier.

The contractors for the construction of the pier are Sydney E. Junkins & Co., of Vancouver. The work is being done under the direction of J. G. Sullivan, Chief Engineer, and Frank Lee, Principal Assistant Engineer, Western Lines, C.P.R., and H. Rindal, Division Engineer, C.P.R., Vancouver.

Canadian Pacific Railway Construction, Betterments, Etc.

Eastern Lines.—A contract is reported to have been let to the Deakin Construction Co., Montreal, for the erection of an employes building at St. Andrews, N.B., to be of frame and stucco construction, 32 x 125 ft., 2 stories high, and estimated to cost $25,000.

Plans for building a second track from Summerhill Ave., Toronto, to Leaside Jct., were laid before the York Tp. Council, Feb. 5, by A. McMurchy, Solicitor, and A. L. Hertzberg, District Engineer. The council asked that a safety device be provided at the crossing of the Todmorden Road. The building of this line will give the company a double track line from West Toronto to Leaside Jct.

Western Lines.—We are officially advised that the principal works to be undertaken during this year, and for which expenditures have been approved, include the following:—20 new stations—one of these, at Field, B.C., is to be specially designed; 2 new section houses; 41 new stock yards; new systems of water supply at Reeder and Neudorf, Man.; Holdfast, Rufus, Sinis and Springside, Sask.; and new dams at Govanlock and Eastend, Sask.; new grain loading platforms at several points and extensions to many existing platforms; new coaling plants at Brandon, Man., and Calgary, Alta.; new ice houses at Revelstoke and Okanagan Landing, B.C.; a new outward freight shed at Regina, Sask.; the freight sheds at Swift Current, Cabri and Prussia, Sask., are to be extended; a new building is to be erected at Regina, Sask., for the Dominion Express Co.; several existing waterpipe lines are to be relaid; about 27 miles of new woven wire fencing is to be placed; some tree planting is to be done on the Swift Current, Maple Creek and Brooks Divisions; systems of automatic signals for the convenience of operators are to be installed at Fort William terminals, Brandon yard, Kemray, and at the Connaught tunnel. At Vancouver some dredging work is to be carried on, a rubble wall erected and the work of extending pier D is to be completed.

On the Western Lines generally a large number of wooden culverts are to be replaced with reinforced concrete culvert pipe; several wooden trestles are to be filled, the waterways to be provided with concrete pipes or other permanent structures; wooden trestle near Minnedosa is to be replaced by a reinforced concrete trstle. An extensive concrete retaining wall is to be built east of Kenora, to hold the main track embankment. A Howe truss bridge on the Kimberly subdivision is to be replaced with steel spans on concrete piers; ten tunnels on the Shuswap subdivision are to be provided with concrete portals and one of them is to be partially lined with concrete. A very large amount of ballasting, ditching, resupporting, etc., is to be done on the present main tracks, many new tie plates and rail anchors are to be installed; a number of new side tracks and passing track extensions are to be laid.

No new lines are to be put under construction, but the line from Vantage to Assiniboia, which will give a through connection from Assiniboia to Moose Jaw, is to be completed.

Application has been made to the Western Lines management to take up the construction of building a semi-circular branch line from Govanlock to either Kincaid or Averock, on the Weyburn-Lethbridge line. It is not likely that anything will be done about this line this year, in view of the statement made by Grant Hall, Vice President and General Manager, Western Lines, quoted elsewhere, or of the reported statement of J. M. Cameron, General Superintendent, Alberta District, that the company had great difficulty in getting sufficient rails for its ordinary maintenance work.

Tenders were invited recently to be put in by Mar. 1 by J. M. Cameron, General Superintendent, Calgary, Alta., for the following works: Seven no. 4 section houses, to be built at Navarre, Superb, Fusiliar, Compeer, Kirremuir, Fincastle and Pakawki; six A 2 station buildings with 50 ft. freight sheds to be built at Major, Piopot, Halton, Leonard, Enchant and Jenner; drilling 8 in. well at Conrad, approximately 500 ft. deep; drilling 10 in. well at Burdette, approximately 300 ft. deep; excavation and backfillling for waterpipe lines as follows—Taber, 2½ miles; Dunmore, 1½ miles; Grannum 1½ miles, and Suffield, 3 miles.

Rails, Etc. from Canadian Railways for France.

In connection with the removal of rails from Canadian railways a return has been submitted to Parliament of the correspondence with the Imperial Government on the matter, together with copies of orders in council made in connection therewith, and of action taken thereon. The Minister of Railways, when the return was asked for in the House of Commons, said the first request that came from the British Government for rails was for about 1,080 miles, and it was thought then that the Canadian Government should do anything in its power to help the Imperial Government during the war. The intention in regard to the western part of Canada was to take rails up from stretches where the Grand Trunk Pacific and the Canadian Northern railways ran parallel to each other. It would certainly have been no hardship to take these rails up. When, owing to the difficulty of securing transportation overseas, the request was cut down to 300 miles, the government decided to take the rails up at divisional points on the National Transcontinental Ry, and that has been done.

On another occasion the Minister informed a questioner in the House of Commons that the weight of the rails being taken up, including fastenings, turnouts, etc., was approximately 45,000 gross tons.

The Alberta Board of Public Utilities report for 1916 states that it has under its jurisdiction the section of the Alberta & Great Waterways Ry. from Carbondale to Lac La Biche, 174 miles; and the Central Canada Ry., from McLennan to Peace River, 48 miles.

Sir John C. Eaton's New Private Car.

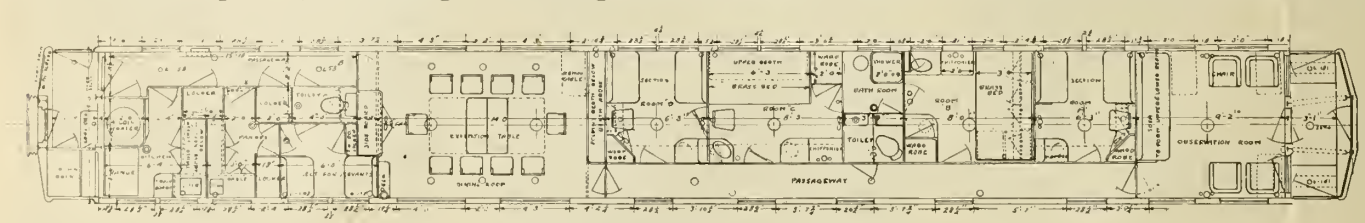
The private car Eatonia, which was used by Sir John C. Eaton, President of The T. Eaton Co., Ltd. departmental store owners, Toronto, for several years, but which was practically destroyed by fire in the Toronto railway yards some months ago, has been replaced by a new car of the same name, which is of the most modern type of steel construction. It is 78½ ft. long and weighs 87 tons, the trucks weighing 27 tons and the body 36 tons. The framing consists of a self-supporting centre sill and side construction, so built as to give a square elevation with continuous steel sash rest. The 1¼ in. thick composition floor material rests on 0.031 in. thick pressed steel flooring riveted to the main framework. The bolsters are of built up construction, formed from rolled sections and pressed shapes with centre bearings of cast steel. Westinghouse friction draft gear and double LN-1612 equipment is provided, the trucks being of 10½ ft. wheel base, cast steel frame single shoe type, with 36 in. diam. rolled steel wheels, and axles, having 5½ in. diam. 10 in. long journals.

As shown by the accompanying floor plan, it has accommodation for 12 occupants. The dining room seats 10 persons and the observation room 9. The rooms are in the following order, commencing from the kitchen end: Kitchen, pantry, servants' quarters, general lavatory, dining room, two compartments, two staterooms, bathroom and observation room, a total of 12 separate compartments providing for all the necessities of travel. The interior finish of the kitchen end of the car is of steel, white enamelled in the kitchen and pantry, but painted and grained quarter sawed oak in the passageways and servants' quarters. That in the vestibules is steel, painted body color. The observation room, dining room and main passageway finish consists of native walnut of natural finish, and the staterooms and compartments are finished in Cuban mahogany, the general lavatory and bathroom all being white enamelled. The observation room chairs and sofa are upholstered in velour. For the staterooms and compartments, tapestry is employed, except that the chairs in the staterooms are covered with printed linen. Blue leather is employed as a covering for the dining room chairs, and machine buffed leather for the servants' quarters. The kitchen floor covering is of sheet copper; the passageways, general lavatory and bathroom of 5/16 in. thick rubber tiling, carpet being used for the remainder of the car.

The windows are double, in two parts, throughout the car, except the high windows, which are single. Wooden blinds are provided in the kitchen, the remainder of the car having roller curtains of silk pantasote, supplemented by inner curtains of Holland material.

The heating system throughout consists of the Chicago Car Heating Co.'s standard vapor equipment, in conjunction with a 4-coil steel hot water circulation heater. Individual control is obtained for each room for the vapor system of piping only, it being impracticable to extend the plan to the hot water circulating system. Twenty ventilators are located in the upper deck. The lighting system includes the latest type 30-volt, body hung, 3 kilowatt axle device, with 2 ampere hour meter controls and 32 cells of 350 ampere hour type EP-15 Manchester positive plate, box negative batteries connected in parallel. The auxiliary lighting system consists of a double set of compressed gas tanks.

Some of the special features worthy of note are: The dressing tables in staterooms are fitted with bevelled edge plate glass. A speed recorder is installed in the observation room with a duplex air gauge adjoining. A child's small brass bed is located in the stateroom nearest the dining room and so located that when not in use it will slide under the larger bed in the room. Arrangement is made in the floor of the dining room, at table leg, for socket, so that the table can be wired for candelabra or such lights as it may be desired to use. The car is wired for telephones, with roll of wire for connection at stations, one telephone being placed in the observation room and another being an extension of the observation room telephone, located in the dining room, so that servants can answer calls without traversing the whole length of the car, but still the message can be received in the observation room. Vacuum cleaner with necessary receptacles is installed.



Plan of Sir John C. Eaton's Private Car.

Railway Constuction in Alberta in 1916.

The Alberta Railways Department report states that during 1916 there were 143 miles of new railways built in the province, making a total of 919 miles of new railways built within the past three years. The three McArthur lines were responsible for 129 miles of these new lines, their separate figures being: Alberta & Great Waterways Ry., 48 miles; Central Canada Ry., 1 mile, and Edmonton, Dunvegan and British Columbia Ry., 80 miles; while the C.P.R. built 11 miles, and the Canadian Northern Ry., 3 miles.

The length of railways in the province at Dec. 31, 1916, was: C.P.R., 1,920 miles; Canadian Northern, 1,250; Grand Trunk Pacific, 707; Edmonton, Dunvegan & British Columbia, 417; Alberta & Great Waterways, 49; total, 4,566 miles.

Ties for National Transcontinental Ry.—The Minister of Railways stated in the House of Commons recently that 93,121 ties were bought from the Rat Portage Lumber Co., Kenora, Ont., in 1907, as follows: 25% 1st class, delivered at St. Boniface, 80c.; 25% 2nd class, delivered at St. Boniface, 70c.; 25% 1st class, delivered at Rennie station, 78c.; 25% 1st class, delivered at Rennie station, 68c.

Enquiries About Hudson Bay Ry.

In answer to enquiries in the Senate recently, by Senator Casgrain, Sir James Lougheed gave the following information respecting the Hudson Bay Ry.: The total amount expended to Dec. 1, 1916, was $17,557,100.42, viz.: on the railway itself, $12,103,603.43, and on the Port Nelson terminals, including the port, wharves and excavation of channel, $5,453,496.99. The estimated cost of the railway when completed is $16,000,000, of the terminals $10,000,000, and of the grain elevators $1,000,000.

About 413 miles of the railway have been graded from Pas, Man., ready for track. Eleven miles remain to be graded. Rails have been laid for 332 miles from Pas.

The channel at Port Nelson, from turning basin at docks, to deep water of natural channel, will be about ¾ of a mile long, beyond which some improvements will be made at isolated points in the natural channel for a further distance of 1¼ miles. The depth of water at low tide in the excavated channel will be 20 ft., and the width of that channel will be 500 ft. No separate estimate of cost of dredging in the port and channel, when completed, has been made. The number of men employed on Government works at Port Nelson last summer varied from week to week. The maximum number on any monthly pay roll was 578. In Dec., 1916, there were 90 on the pay roll.

During the 1916 navigation season two steamships, Durley Chine and Sheba, were employed by the Government to transport men, materials and supplies to Port Nelson. Both vessels are owned by the Government, and the cost of operating them on the Hudson Bay route during 1916 was $31,355. There is no coal on sale at Port Nelson. The cost of each cargo varies with the class of vessel used to transport it.

Kettle Valley Ry. Suit.—The case of Grant, Smith & Co. against the Kettle Valley Ry. is set down for hearing at the current sittings of the British Columbia Supreme Court. The claim is for $699,608.99 and interest from Oct. 21, 1914. The plaintiffs were the contractors for building the company's line from Penticton to Hydraulic Summit. The amount of the construction accounts totalled $3,084,585.60, of which the company paid $2,384,976.61, leaving unpaid the amount claimed.

Railway Lands Patented.—Letters patent were issued during January, in respect of railway lands in Manitoba, Saskatchewan, Alberta & British Columbia, as follows:—

	Acres.
Calgary & Edmonton Ry.	5,040.00
Canadian Northern Ry.	320.00
Edmonton, Dunvegan & British Columbia Ry.	211.88
Grand Trunk Pacific Branch Lines Co...	6.24
Manitoba & Southeastern Ry.	295.32
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.	4,060.588
	9,934.028

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates of orders, immediately following the numbers are those on which they were drawn.

General order 178, Jan. 27.—Consolidating supplementary regulations issued since general order 78 with respect to inspection and testing of locomotive boilers and their appurtenances.

General order 179, Jan. 29.—Ordering that rule 26, sub. sec. (d) of Regulations Governing Baggage Car Traffic be amended by adding after word, "the," seventh word in second line, and after word "carrier," eighth word, following words, "originating or terminating"; and by striking out words, "at destination," which are respectively ninth and tenth words of second line of sub. sec.

General order 180, Jan. 30.—Approving revised Supplement 10 to Express Classification for Canada C.R.C. 3, submitted by C. N. Ham, Sec., Express Traffic Association of Canada.

General order 181, Feb. 3.—Amending general order 179, Jan. 29, by adding after word "subsection," in seventh line of operative part, words, "and by striking out word 'thereat,' the fourth word in third line of said sub-section, and substituting therefor words, "at destination."

25821. Jan. 23.—Approving C.P.R. clearances of cross section of chane frame on Mowat Ave., Toronto.

25822. Jan. 16.—Ordering that service furnished by G.T.R. during the summer by trains 70 and 75, between St. Johns and Iberville, Que., be continued during winter.

25823. Jan. 2.—Ordering Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) to build farm crossng for J. A. Harris and C. A. S. Atwood, of Grad Forks, B.C.

25824. Jan. 22.—Ordering Canadian Northern Ry. to appoint station agent at Englefield, Sask., by Mar. 1.

25825. Jan. 24.—Amending order 25812, Jan. 19, re Canadian Northern Ry. station agent at Aaron, Sask.

25826 to 25828. Jan. 24.—Approving Bell Telephone Co., agreements with Falkirk Telephone Co., Jan. 9; Tay Tp. Ont., Dec. 14, 1916; and Harvey Tp., Ont., Jan. 8.

25829. Jan. 26.—Amending order 15751, Dec. 14, 1911, re G.T.R. crossing just east of Grimsby Beach station, Ont.

25830. Jan. 25.—Authorizing Canadian Northern Ry. to buld bridge over Valley River near Grandview, Sask.

25831. Jan. 31.—Authorizing C.P.R. to build spur for Ellion Milling and Elevator Co., Lethbridge, Alta.

25832. Jan. 26.—Authorizing G.T.R. to rebuild bridge 112 across Sauble River, Ont.

25833. Jan. 25.—Authorizing New York Central Rd. to rebuild bridge 16A, north of Pana, Ont.

25834. Jan. 27.—Authorizing G.T.R. to use bridge 61, carrying its track across C.P.R. sidings and roadway near Arnprior, Ont.

25835. Jan. 27.—Authorizing C.P.R. to build spur for the Saskatchewan Coal, Brick & Power Co., Shand, Sask.

25836. Jan. 29.—Ordering G.T.R. to provide suitable access for vehicles to station at Sturgeon St., Omemee, Ont.

25837. Jan. 29.—Ordering that cost of maintaining interchange track near Globe elevator, Calgary, Alta., built under orders 24085 and 24191, Aug. 19 and Sept. 17, 1915, be paid by Grand Trunk Pacific Ry.

25838. Jan. 26.—Amending order 5666, Nov. 10, 1908, providing that 20% of cost of installing gates at crossing of Thames St., Ingersoll, Ont., be paid out of railway grade crossing fund.

25839. Jan. 30.—Approving Y between Canadian Northern Ry. and Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.'s track in Hudson's Bay Co.'s reserve, Prince Albert, Sask.

25840. Jan. 31.—Ordering that all C.P.R. train movements over crossing of Hamilton St., Regina, Sask., be flagged.

25841. Jan. 30.—Approving plan showing proposed new location and clearances of car roof testing sprinkler at Angus shops, Montreal, subject to C.P.R. undertaking to keep employes off tops and sides of cars while operating there.

25842. Jan. 31.—Authorizing C.P.R. to rebuild bridges 24.1 and 24.2 over Otonabee River, at Peterborough, Ont.

25843. Jan. 31.—Authorizing C.P.R. to make connection 297 ft. long with Canadian Northern Ontario Ry. in Lot 7, Con. 2, Nipigon Tp., Ont.

25844. Jan. 20.—Extending to June 1, time within which Michigan Central Rd. may complete road diversion, etc., west of Brookfield, Ont., as authorized by order 25791, Jan. 3.

25845. Feb. 1.—Authorizing Canadian Northern Ry. to build bridge across Whitesand River, in s.w. ¼ Sec. 28-30-3, w. 2 m., Sask.

25846. Feb. 2.—Ordering that rate charged by C.P.R. on feldspar, in car loads of minimum weight of 25 net tons, from Maberly, Ont., to East Liverpool, Ohio, be $3.04 per net ton; schedule to give effect to this order to he published by Feb. 10.

25847. Feb. 3.—Dismissing complaints of Hay & Co., Woodstock, Ont., and J. H. Still Co. St. Thomas, Ont., that they are unable to load 36 ft. flat car with logs to minimum of 50,000 lbs.

25848. Feb. 3.—Authorizing Canadian Northern Ry. to cross and divert highway between Sec. 15-27-4 and Sec. 2-28-4, w.4 m., Alta.

25849. Feb. 2.—Authorizing C.P.R. to build spur 550 ft. long for Curtis's & Harvey (Canada) Ltd., in Lot 6, Rigaud Parish, Que.

25850. Jan. 30.—Authorizing International Nickel Co. of Canada, to lay conduit under G.T.R. at Erie St., or Fort Erie St., Port Colborne, Ont., and under Canada Furnace Co.'s works at Erie St.

25851. Jan. 30.—Amending order 25258, Aug. 11, 1916, to provide that G.T.R. freight shed authorized to he built at Mimico be located at New Toronto, approximately 1 mile west of approved location at Mimico; and that G.T.R. be at liberty to amend plan of layout at Mimico by eliminating facilities for l.c.l. freight, as shown on plan.

25852. Feb. 2.—Dismussing application of The Shingle Agency of British Columbia, on behalf of shingle manufacturers, for an order requiring railway companies to furnish a milling-and-sorting-in-transit rate.

25853. Jan. 31.—Relieving Canadian Northern Ry from providing further protection at highway one mile east of Lampman station, Sask.

25854. Feb. 2.—Ordering that 20% of cost of installing gates at crossing of Church St., Weston, Ont., by G.T.R. and C.P.R. be paid out of railway grade crossing fund; apportioning one-third of cost of operation and maintenance, and amending order 25703, Dec. 22, 1916.

25855. Jan. 31.—Extending for 30 days from Jan. 31 time within which C.P.R. may install gates at crossing of Main St., Farnham, Que.

25856. Jan. 29.—Approving Canadian Northern Quebec Ry. plan showing station to be erected at St. Alexis, Que.

25857. Feb. 8.—Authorizing Edmonton, Dunvegan and British Columbia Ry. to build highway crossing in n.w. ¼ Sec. 12, Tp. 62, R. 27, w.4 m., Alta., and to close road allowance on north boundary.

25858. Oct. 30, 1916.—Relieving C.P.R. from providing further protection at first public crossing east of Yamachiche station, Que.

25859. Feb. 6.—Approving agreement between Bell Telephone Co. and Cavan Rural Telephone Co., Durham County, Ont., Jan. 26.

25860. Feb. 13.—Authorizing G.T.R. to build spur and to extend existing siding for Montreal Water Works Department.

25861. Feb. 10.—Dismissing application of Alleghany Lumber Co., Pittsburg, Pa., for order directing G.T.R. to put into effect through rate on lumber from Midland, Ont., to Cleveland, Ohio, and to cease from charging a greater rate on lumber, in carloads between these points than it charges to Cleveland from Penetang, Out.

25862. Feb. 12.—Approving Canadian Northern Quebec Ry. revised location from Lot 1017, St. Theophilus Parish to Lot 87, St. Flore Parish, 3516.3 ft, and to rebuilt bridge over St. Maurice River at mileage 81.12.

25863. Feb. 14.—Authorizing C.P.R. to build two spurs for Canadian Aeroplanes, Ltd., Toronto.

25864. Feb. 21.—Approving agreement between Bell Telephone Co. and Beckwith & Montague Rural Telephone Co., Sept. 8, 1915.

25865. Feb. 14.—Ordering St. Martins Ry., running from Hampton to St. Martins, N.B., 30 miles, to make repairs to 10 bridges on its line; to be commenced by Apr. 1, and completed within 60 days.

25866. Feb. 15.—Relieving C.P.R. from providing further protection at highway crossing near Amazon station, Sask.

25867. Feb. 14.—Relieving G.T.R. from providing further protection at Bridge St., Richmond, Que.

25868. Feb. 14.—Authorizing Alberta Public Works Department to make highway crossing over C.P.R., in s.w. ¼ Sec. 28-2-16, w.4 m.

25869. Feb. 15.—Authorizing C.P.R. to remove station agent at Nevis, Alta., caretaker to be appointed.

25870. Feb. 15.—Authorizing Montreal & Southern Counties Ry. to operate signals on its track across Victoria Jubilee Bridge, Montreal.

25871. Feb. 15.—Authorizing C.P.R. to build spur for Fraser, Ltd., Fredericton, N.B.

25872. Feb. 13.—Dismissing complaints of Vancouver and Victoria Boards of Trade, Dominion Canners, Ltd., Glasco, Ltd., Oakville, Ont. and City of Victoria against proposed increase in rates on canned goods and hardware to points on Pacific Coast, as set out in Supplement 3 to Canadian Freight Association Westbound Tariff, no. 1, effective Feb. 12.

Telegraph, Telephone and Cable Matters.

The Dominion Government has extended its telegraph system on Vancouver Island, from Fisherman's Bay to Shushartie Bay.

The Marconi Wireless Telegraph Co. has declared a dividend, payable Feb. 1, on its cumulative participating preference shares at 7%, being 1s. 4.80d. per share, less income tax at 4s. 6d. in the pound sterling, net amount 1s. 2d. per share.

Recruiting officers have been warned not to enlist telegraph operators unless they are released by the companies by which they are employed, as the number of operators who have enlisted is likely to cause a serious handicap to efficient work by the companies.

The Governor in council has established certain orders and regulations regarding cable, radio-telegraph, telegraph and telephone companies, under the War Measures Act, providing that the Minister of Militia may take over such companies' offices, plant, etc., for use on His Majesty's service, as he may deem fit, and may assume entire or partial control of the transmission of all messages.

The Great North Western Telegraph Co. has opened offices at Norwood and Ruel, Ont., Forgan, Sask., and Hope and Port Kells, B.C.; and has closed its offices at Cape Rosier and Perthuis, Que.; Kashbaw and Muskoka Lakes, Ont.; Dropmore, Man., and Claybanks, Sask. Names of offices have been changed as follows: Chaudiere Curve, Que., to Charny; Deux Rivieres, Que., to St. Stanislas station; and Joly Siding, Que., to River Henry.

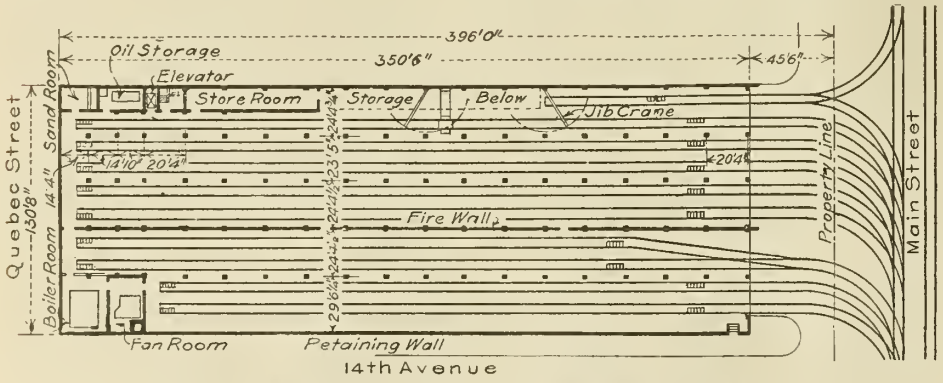
The Dominion Government estimates for the year 1917-18 provide for expenditure on telegraph and telephone lines and wireless telegraphy, as follows: repoling and general repairs to Cape Breton telegraph system, $4,600; half cost of construction of telegraph lines jointly owned by Anglo-American Telegraph Co. and Dominion Government, in Prince Edward Island, $17,000 (revote); repairs in Quebec, $3,000; renewal of poles on Moose Jaw-Wood Mountain Line, Sask., $5,000 (revote); offices and dwellings at Grande Prairie and Dunvegan, on Peace River Line, Alta., $6,525 (revote); repairs and improvements to office buildings in Saskatchewan and Alberta, $2,350; general repairs and improvements to main line telegraph and telephone lines in British Columbia, $22,400; to provide for build- and maintenance of wireless telegraph stations, $295,000.

At the Maritime Telegraph & Telephone Co.'s annual meeting at Halifax, N.S., recently, the report showed that there was an increase of 1,479 subscribers for telephone service, and a satisfactory increase in the net profits. After payment of all charges and 6% dividend on the perferred and common stocks, there was a surplus of $10,995, making, with the balance brought forward from the previous year, $19,035. S. M. Brookfield, President, stated that the Public Utilities Commission's recent award had reduced the company's valuation of its property from $3,121,533 to $2,571,219, thus making the valuation $764,000 less than the capital. The commission is now working on a new schedule of rate, and if this be so arranged as to enable 8% on the valuation amount to be earned, the 6% dividend would be maintained, but if only 7% could be earned, then not more than 3% would be available for common stock.

Electric Railway Department

British Columbia Electric Railway Co's Vancouver Car Barn.

Although the final completion of the structure as designed has been postponed on account of war conditions, the two-storey reinforced concrete car barn for the British Columbia Electric Ry. Co., Vancouver, will be unusual in the fact that car storage is provided on two levels, to which access is obtained by two entrances at opposite ends of the building. The elevations of the street tracks differ by about 20 ft. in the total distance of nearly 400 ft. between streets, and a counterfort retaining wall is used to provide the necessary resistance to earth pressure on one side and one end of the structure.



Plan of Vancouver Car Barn, British Columbia Electric Railway.

To save space and reduce the column spacing to a minimum, relatively slender built-up steel columns of the box type were used up to the second floor beams of reinforced concrete, using concrete fireproofing cast with the latter. Track pits under all cars on the first floor were provided by supporting the rails and concrete slab platforms on reinforced concrete piers. The new barn is located just south of a one-storey timber frame barn which was in operation, and it was required that the construction should proceed without encroaching on the existing yard on the south more than was absolutely necessary. This was accomplished by constructing the new concrete structure in two parts, the southern portion, including the fire wall which divides the building, being completed first.

The accompanying plan and part section show that the new concrete building will be 350 x 130 ft., and about 40 ft. high on Main St., and 20 ft. high on Quebec St. The difference in level of these streets at the ends of the building suggested the idea of doubling the storage space by making the barn of two-storey construction, running the cars to be stored on the upper level halfway around the block through Thirteenth Ave. on the north. This required a special design to support the heavy car loading on the second floor. Reinforced concrete beams and slab were used, as indicated on the cross-sections herewith, with the beams placed under the rails in all cases except at the north side, where a turnout beyond the lunchroom, elevator and foreman's room in the northwest corner is necessary to locate the north, or tenth, track.

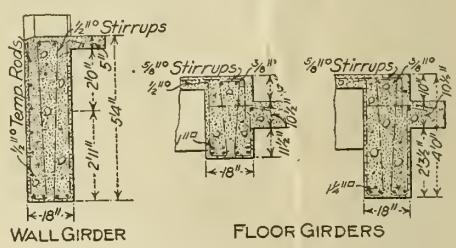
By spacing the tracks 11 ft. 8½ in. on centres and using steel core columns for the first floor, it is seen that the property width just accommodates 10 tracks, placed in 5 aisles of 2 tracks each. In the northwest corner the sand room, oil storage room and elevators are located, with a storeroom and general storage space below on the north side of the building, with jib cranes located as shown.

The design of the first floor track supports was made to accommodate either a 55 ft. interurban car weighing 82,000 lb. on 4 axles spaced 6.5, 25.5 and 6.5 ft. apart, or a 43 ft. line car weighing 73,000 lb. on 4 axles spaced 6, 23 and 6 ft. apart. The second floor design will accommodate the double end city car, over 42 ft. long, weighing 47,500 lb. on 4 axles spaced 4.5, 13.6 and 4.5 ft. apart. On the spaces between cars the regular specified live load of 75 lb. per square foot was provided for. The working unit stresses in steel and concrete complied with the building law. The concrete protected steel columns were designed without considering the concrete to carry any of the load.

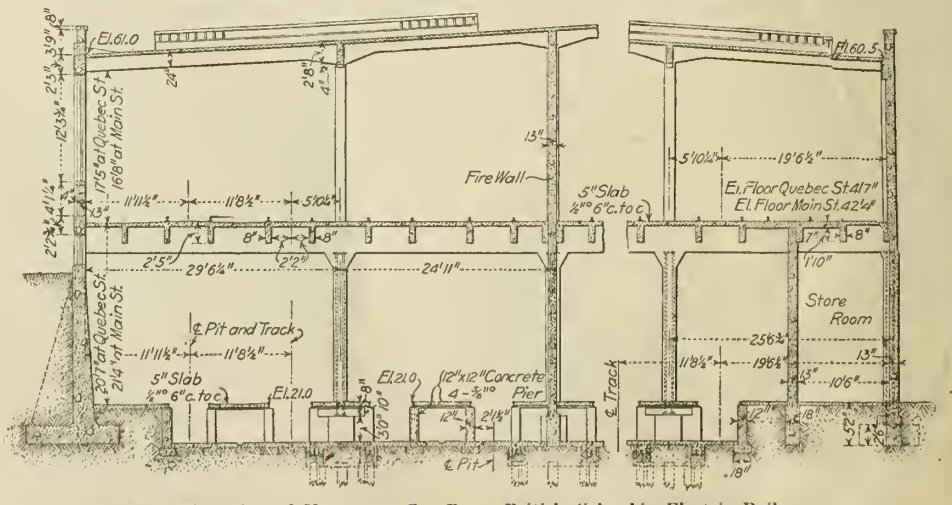
The first floor tracks and slabs are carried on 12 x 12 in. piers, spaced about 7 ft. apart, and 4½ ft. high, in order to give free access to the running gear of any car at any time. The steel rails, 7¼ in. deep, act as beams between the piers. The main piers supporting the interior columns are of concrete about 8 ft. square, reinforced by ¾ in. rods, and capping the 10 timber piles used to increase the bearing power of the foundation soil.

The second floor is supported by box columns of steel composed of two 9 in. or 10 in. channels with two 12 in. plates, protected on the outside by 4 in. of concrete and filled with concrete to prevent corrosion on the inside. This concrete, a 1:2:4 gravel mix, was poured with the beams and slab of the second floor, with brackets. The south part of the building was constructed first, up to the 13 in. fire wall, allowing the use of the storage yard on the south of the old barn until the first part of the new building could be used.

The retaining walls, of the reinforced concrete counterfort type, with counterforts spaced about 8 ft. apart, were constructed on the south and west, the height of the west wall decreasing with the grade of Fourteenth Ave., and surmounted by a wall containing windows as soon as the grade permited sufficient clearance. The building is sprinkled by the dry pipe system. When completed, a 35,000 gal. water tank will be placed on the roof, supported on a steel tower over a bay near the centre of the building. The construction and design were carried out by Westinghouse Church Kerr & Co.



Details of Wall Construction, Vancouver Car Barn, British Columbia Electric Railway.



Section Elevation of Vancouver Car Barn, British Columbia Electric Railway.

Toronto Street Cars.—The first street car in Toronto, drawn by horses, is said to have been used in 1861, and the first electric car in 1891. The horse drawn cars did not disappear until 1893.

The Ottawa Electric Ry. issues 20 trip cards for the use of school children, which have to be signed for and by the children, and presented for punching to the conductor on each trip. Application has been made to the company to issue tickets as in Toronto, Montreal and other places in place of the cards.

Overcrowding on Toronto Railway Cars.

For several years past the City of Toronto has been attempting to deal with the overcrowding on the Toronto Ry. cars, but without achieving anything in the way of relief. The situation can certainly be described as unsatisfactory, but in the apportionment of the blame the city council and the public must bear their due share. The city has on several occasions proceeded against the company for maintaining a common nuisance, and has secured a conviction, which is at present under appeal to the Imperial Privy Council. Apart from this appeal on technicalities, the fact remains that the city has the right to proceed against the maintenance of a common nuisance, and this involves the duty of making and enforcing efficient regulations to prevent a public utility from deteriorating into a public nuisance. In not making bylaws defining overcrowding, fixing the number of passengers each car may carry, and enforcing such bylaws against the company and the public alike, the city has failed in its duty.

Just prior to the outbreak of war a comprehensive report was made on traffic conditions in the city, the gist of which was that traffic conditions could be improved by a considerable extension of track, additional cars, rerouting of cars, and passenger control, and certain recommendations along these lines were made. On account of the financial condition generally, it was decided to postpone any action on the report until normal conditions prevailed. The city, however, appears to think that the overcrowding condition can be eliminated simply by the addition of cars. This alone would not prevent overcrowding, but would possibly add to the trouble in another way. If the number of cars on any given route were multiplied by ten, passengers would still force their way on a car already loaded beyond capacity, unless prevented. The public requires to be educated in the matter, but it never will be so long as this subject is treated as a joke by the local press and as campaign material by would-be civic legislators. It is generally accepted that more lines are required and it follows that more cars are needed to operate on those lines, but in view of war conditions, it was not considered expedient to involve either the company or the public in any heavy expenditure. Therefore, in order to deal with overcrowding, there remained the possible rerouting of cars and the control of passengers. Practically nothing has been done in the first case, and nothing at all in the second. It is correct to say that there is overcrowding amounting to nuisance on certain routes, and also that there are other cars and routes operated far below capacity. This is a matter which might be taken up by the city and the company in a sympathetic manner, and by cooperation there is no doubt some means could be evolved whereby the nuisance could, to a very great extent, be alleviated. Neither side seems, however, to be able to approach the subject in the condition of mind to ensure success. The control of the passengers is, without doubt, the chief thing to consider in dealing with the overcrowding evil. The present system of collecting fares should be abolished and an up to date pay as you enter system should be installed, as it has been on the Toronto Civic Ry. cars, where the discomforts of overcrowding are considerably minimized by passengers depositing their fares as they enter the cars and not being jostled by the conductor having to force his way through a crowded car to collect the fares. Each car could be marked with the number of passengers to be carried, and the number to be allowed over seating capacity, and the cars could be so constructed that it would be comparatively easy to control the number of passengers getting on, and when the limit under bylaw was reached, the car could be closed in such a way that no other passengers could get on. Other cities with greater population than Toronto have grappled with, and successfully overcome, this trouble. There was a little difficulty at first in enforcing the rules, but well within a month the lesson had been learnt, and overcrowding ceased to exist, except in a few special cases, where a small fine generally had a salutary effect. The onus of keeping the number of passengers within the limit allowed by the bylaw would be placed on the conductor primarily, and the general responsibility for oversight on the company's inspectors. The number of fares missed by the conductor on an overcrowded car, must, in the course of a year or so, amount to the cost of a car, and to a certain extent, the knowledge that one can ride free on a car, because the conductor cannot collect the fare, causes a large number of persons to ride short distances who would otherwise walk.

The city is again making application to the Ontario Railway and Municipal Board for an order to compel the Toronto Ry. to place an additional 200 cars in service. Evidence was given on behalf of the company showing the difficulty there was in obtaining material for the construction of cars, also the difficulty of obtaining labor, both for building and operating cars, and this evidence was attempted to be refuted by witnesses on behalf of the city. At the time of writing the board had come to no decision.

The Mayor announced, Feb. 13, that he had instructed that an indictment be prepared for the forthcoming March assizes against the Toronto Ry. for maintaining a common nuisance by overcrowding its cars, and if he failed to get it past the grand jury he would proceed by other methods. Similar indictments, with resultant conviction and appeal, have now occurred at intervals during the past six or seven years. The company's franchise will expire by effluxion of time early in 1921, so it is quite conceivable that the Toronto Ry. overcrowding case will still be before some court or other at that date.

Regina Municipal Railway Earnings.

Following are the earnings, expenses, etc., for Dec., 1916, compared with those for Dec., 1915; and the totals for 12 months ended Dec. 31, 1916:

	Dec. 1916	Dec. 1915	12 months to Dec. 31,'16
Total revenue .	$23,724.35	$19,336.88	$212,790.19
Expenditure . .	19,850.87	14,933.31	191,359.68
Net earnings . .	3,873.48	4,403.57	21,430.51
Fixed charges .	8,239.64	8,022.96	97,575.54
Deficit , ...	4,366.16	3,619.39	76,155.03
Aver. exp. per car mile without power . . .	19.45c	13.32c	15.47c
Aver. exp. per car mile with power	25.22c	18.62c	20.72c
Cost per k.w.h.	1.41c	2.02c	1.67c
Cost per car mile	5.91c	5.03c	5.25c
Platform wages per car hour.	72.40c	73.76c	72.10c
Expenses less fixed charges percentage of earnings			83.67%
Expenses with fixed charges percentage ot earnings			118.40%

Nova Scotia Tramways and Power Co. Ltd., Prospectus.

Following are extracts from a prospectus of $2,250,000 of 1st mortgage gold bonds issued recently: The company was incorporated by the Nova Scotia Legislature in 1914, with authority, among other special powers, to purchase the Halifax Electric Tramway Co.'s properties and franchises, comprising all street railways, commercial electric light and power and gas properties in Halifax, and to acquire water powers, lands, etc., on the Gaspereaux River, 55 miles from Halifax, capable of a hydro-electric development of approximately 12,000 h.p. The capitalization is:

	Authorized	Outstanding
1st mortgage 5% gold bonds (this issue) ..	$10,000,000	$2,250,000
Preferred stock, 6% cumulative	2,500,000	1,500,000
Common stock	3,500,000	2,500,000

The proceeds of the sale of the stocks and bonds now outstanding as above will provide for the acquisition of the Halifax Electric Tramway Co.'s properties, and the water power rights, lands, etc., on the Gaspereaux River, also adequate working capital. The Nova Scotia Board of Comimssioners of Public Utilities has approved the issue of $3,000,000 of bonds, $2,500,000 of preferred stock, and $2,500,000 of common stock for these specific purposes and for the construction of a hydro electric plant, utilizing the Gaspereaux lands. The bonds and stocks now outstanding are a part of the issue thus approved.

The N. S. Board of Commissioners of Public Utilities, in 1916, decided that the fair and reasonable value of the properties of the Halifax Electric Tramways Co., as of June 15, 1915, was $3,450,000, and of the Gaspereaux lands, etc., $300,000, a total of $3,750,000, on which these $2,250,000 bonds are a first mortgage. Since June, 1915, substantial additions and improvements have been made to the company's property, including a 4,000 h.p. increase in power station capacity and an entirely new gas plant to replace the old one. The company's net earnings increased from $245,525 in 1906 to $342,897 for the 12 months ended Oct. 31, 1916. Net earnings for 1915 were nearly three times, and in each of the last six years were more than double, the $112,500 interest on these bonds. Net earnings, 12 months to Oct. 31, 1916, were more than three times these interest charges. Both gross and net earnings have shown increases each year for the last ten fiscal years.

The company operates under franchises which, in the counsels' opinion, are without limit of time. The physical property of the Halifax Electric Tramway includes a street railway system, with 21.2 miles of track, the greater part of which is double track. There are 62 passenger cars, the necessary car barns, a central power house, with 7,300 h.p. capacity, including a new 4,000 h.p. turbo generator now being installed, a lighting and power distribution system, a modern gas plant, with about 42 miles of pipe in the distributing system, etc.

The Sherbrooke Ry & Power Co., which it was reported recently might temporarily suspend its electric railway service, wholly or partially, in order to relea power for pressing needs of munition manufacturers, has announced that as an additional source of power has been brought into Sherbrooke, it has been found unnecessary to further consider such suspension.

Toronto Civic and Other Street Railway Matters.

Following are extracts from an interim report by the Toronto Comimssioner of Works, R. C. Harris, for the 11 months ended Nov. 30, 1916:

Eastern Entrance to Exhibition.—The construction of an eastern entrance to the Canadian National Exhibition Grounds via Bathurst St. and Garrison Common was authorized by Council May 1, 1916, and commenced on May 2. As a whole the work to be done consisted of the reconstruction of the Bathurst St. bridge over the G.T.R. and C.P.R., including the raising of the north approaches to same on Bathurst and Front Sts., and the construction of a wooden trestle forming the south approach, together with a reconstruction of the roadway leading to Queen's Wharf; the construction of wooden trestles along the north parapet of the Old Fort and over the C.P.R. track leading to Queen's Wharf; and the construction of a double track street railway from the intersection of Bathurst and Front Sts. to the eastern entrance gates of the exhibition grounds. By reason of an agreement with the G.T.R., that company wrecked the old Bathurst St. bridge, erected the steel work, roadway slab and easterly half of the north abutment of the new bridge, and constructed the Bathurst-Front Sts. approach to same. All of the other bridge construction work was performed by city forces on a day labor basis. The street railway track construction work consisted of the grading, ballasting and laying of track materials upon a length equivalent to 10,100 lin. ft. of single track, and of the erection of trolley poles, transmission cables, trolley wires and other overhead work necessary to place the line in a condition ready to operate. In the track construction 6 in. gravel ballast; 6 in. x 8 in. x 8 ft. cedar ties; and 60 lb. A.S.C.E. section rails were used. The overhead construction consists of two 500,000 c.m. copper cables and 2-0 hard drawn round copper trolley wires. The latter work is of the open construction type throughout.

Yonge St. Subway was paved with granite sets and completed on Sept. 25. Street cars commenced running through it on Oct. 4.

Civic Railway Construction.—During 1916 there has been considerable extension work on the Civic Ry. Contracts have been awarded for 13 double truck cars required to strengthen the service on Danforth and St. Clair Aves. Contracts have also been awarded for one single truck car for the Bloor St. service.

At the opening of 1916 sidewalks on Lansdowne Ave. from the top of the hill north of Davenport Road to St. Clair Ave. had been moved to a new location for a 42 ft. pavement. This year all track, overhead and pavement work has been completed, except for a short portion just north of Davenport Road, which is being delayed by order of council.

A large amount of feeder cable was strung on the Eastern Division, being made necessary by a rearrangement of sub-stations by the Hydro Electric.

We have under construction a 9 car capacity addition to the St. Clair Ave. barn, the present barn also having capacity for 9 cars. It is expected that the new barn will be occupied about Jan. 1, 1917.

Traffic has increased on the Civic Ry. Comparing the first 10 months of 1916 with the same period of 1915, Gerrard St. has increased 6.5%, Danforth Ave. 11.8%, St. Clair Ave. 11.0%, Bloor St. 50%, from Mar. to Oct., inclusive, and the entire system, 13.1%. We are now carrying per day about 38,000 revenue passengers, and 1,370 soldiers, who ride free. No additional rolling stock was added during 1916, and the present equipment is working to its full capacity. There have been no serious accidents during 1916.

Street Railway Matters.—Much useful data on street railway traffic has been secured under this appropriation, as well as a small amount of data on vehicular and pedestrian traffic. Most of the work has consisted in securing information relative to overcrowding on the Toronto Ry. Co.'s routes.

Montreal Tramways Commission.

The commission named in the act passed by the Quebec Legislature last session to draw up a new franchise between the City of Montreal and the Montreal Tramways Co., consisted of Senator J. P. B. Casgrain, Montreal; Senator C. Baubien, Outremont, and F. J. Cockburn, of the Bank of Montreal. The latter resigned subsequently, as his engagements did not permit him to act, and the vacancy has been filled by the appointment of A. W. Stevenson, accountant, Montreal.

The commission were duly sworn in on Feb. 9, and subsequently elected Senator Casgrain as Chairman, and appointed R. Beaudry as Secretary. They have opened an office at 92 Notre Dame St., and have applied to the Board of Control for an appropriation of $5,000 to cover present expenditure, which was authorized Feb. 14.

The commissioners have announced that they will begin at once to study the whole of the conditions surrounding the present franchises, and the city's needs. They have also issued the following statement: "After a preliminary survey of the material already available and in possession of the city officials, the commissioners intend calling upon the public bodies, and the citizens at large, for information and suggestions. They are desirous that all possible light and help should be secured. in order to make the proposed franchise a fair and advantageous one for the city, present and future."

Jitney Traffic Notes.

It was reported that 160 jitneymen had taken out licenses under the new bylaw in Vancouver, B.C., up to Jan. 30.

The Edmonton, Alta., City Council, which operates the Edmonton Radial Ry., is considering the question of turning the city ambulance into a jitney car and operating it on a section of Athabasca Ave., on which an electric car is being operated at a loss. It is also suggested that the city might operate a jitney car to the stock yards.

The Quebec Court of Review, sitting at Montreal, Feb. 9, confirmed a judgment of the Supreme Court of May 20, 1913, dismissing the petition of W. G. M. Shepherd, a ratepayer, who asked the court to set aside as illegal a franchise granted by the Montreal City Council to the Canadian Autobus Co., Aug. 22, 1912. The matter had been decided in the same way in another action, which had been carried to the Imperial Privy Council.

The jitney drivers of the Blue Funnel Line have protested against the new jitney regulations put in operation by the New Westminster, B.C., City Council, and propose to carry the matter to court. The principal objection is the license fee for interurban jitneys, which has been raised to $50. In addition to this fee the jitneymen say they have to pay a fee in every municipality through which they pass.

The Vancouver Jitney League has submitted to the Vancouver City Council a proposed new bylaw to amend the one passed recently. J. O. Kerr, President of the league, says the jitneymen want a bylaw that they can live up to, and that the short experience with the bylaw passed recently shows that in regard to routing and some other matters it could be improved, of course, from the jitneymen's standpoint.

The Edmonton, Alta., City Council is asking the Alberta Legislature to pass an act giving it, among other things, power "for prohibiting or licensing and regulating motor vehicles carrying passengers and used or plying for hire within the municipality, defining the routes or limits within which the same may operate, and compelling the owners or operators thereof to furnish bonds or other securities in such amount as the council may require as security for the payment of damages sustained by personal injury or otherwise through the operation or driving of such vehicles."

Kitchener and Waterloo Street Railway Report.

The Kitchener, Ont., Light Commissioner's report for the calendar year 1916 contains the following information about the street railway department.

	1916	1915
Receipts	$55,261.47	$48,628.03
Operating expenses	19,474.01	22,305.83
Maintenance and repairs	7,308.09	5,409.24
Debenture interest	8,059.04	7,851.60
General expenses	7,413.46	6,334.76
Total operating expenses.	42,245.60	41,901.43
Gross profits	13,006.87	6,726.60
No. of passengers carried	1,236,650	1,059,480

Transportation of Posemen in Regina. As stated in Canadian Railway and Marine World some little time ago, the Regina Municipal Ry. management refused to continue carrying postmen for the Post Office Department at the ridiculously low rate of $25 a man per year and asked for $50 per man, which the department refused to pay, and as a consequence the postmen have since been travelling on tickets. The matter came before the city council recently, when one of the aldermen moved that the departmena's offer of $35 a man per year be accepted. The vote resulted in a tie, which under the rules defeated the motion.

Hydro Electric Radial Railway Bylaws.—Referring to the figures given in our last issue regarding the voting of the various municipalities concerned in the proposed hydro electric radial railway from Port Credit to St. Catharines, Ont., we have since been supplied with the official figures, and find that there are slight discrepancies in those previously given. In Clinton Tp., the figures were: 219 for, and 29 against; Louth Tp., 275 for, 7 against, thus making the total vote, 7,282 for, and 5,515 against, instead of 7,236 for, and 5,545 against, as previously mentioned.

Electric Railway Projects, Construction, Betterments, Etc.

Lake Erie & Northern Ry.—The value of the land taken for railway purposes by the company at Jubilee Terrace, Brantford, Ont., in 1913, has been fixed by the arbitrators at $2,000. (Nov., 1916, pg. 460.)

Moncton, Tramways, Electricity & Gas Co.—The Mayor of Moncton, N.B., in his inaugural address to the city council, Feb. 2, said the changing of the route of the street railway was an important matter which would have to be dealt with during the year and would require careful consideration. (Oct., 1916, pg. 425.)

Ontario Hydro Electric Railways.—Chief Engineer Gaby of Hydro Electric Power Commission of Ontario has completed estimates for electric railways through the various municipalities tapped by the St. Catharines and Niagara Falls, the St. Catharines and Welland, and the Hamilton and Port Dover hydro radial lines. These will be considered at a meeting of the representatives of these municipalities at a meeting to be held in Hamilton at an early date.

Timiskaming & Northern Ontario Ry.—Speaking at the Empire Club, Toronto, Feb. 8, J. L. Englehart, Chairman, T. & N.O.R. Commission, is reported to have said the commission was preparing to electrify the line, as it was believed electricity was to be the future motive power in the province. With this object in mind the commissioners had had made during the past two years a complete resurvey of the line and had its new plans completed. The T. & N.O.R. operates the Nipissing Central Ry., an electric railway between Cobalt and Liskeard, part of which is on T. & N.O.R. right of way.

Toronto Civic Ry.—The Toronto City Council is reported to have in contemplation the construction of a line from the northern city limits down Dufferin St. to the exhibition grounds. (Feb., pg. 73.)

Transcona, Man.—An informal proposal for the building of an electric railway into Transcona was discussed recently between representatives of the Transcona Town Council and the Greater Winnipeg Water District Commission. An agreement which had been under consideration by certain private interests was laid before the commission and discussed. It provided for the building of a line from Provencher Ave., St. Boniface, to the corner of Oxford and King Sts., Transcona, by Sept. 1, and for the operation of one round trip an hour. The cost such a line, including equipment, was estimated by the commission at $125,000. The commissioners expressed the view that an exclusive franchise for 10 years should be given, with the option of an extension for 30 years.

At a meeting of the commission, Jan. 27, a letter was read from J. G. Harvey, the commission's solicitor, in which he said the first question to be decided was whether the commission intended to construct and operate a permanent line from Deacon to St. Boniface. Following is a summary of the letter: "The district can expropriate upon and along any streets or public highways for its right of way. Expropriation must be followed by compensation. For the pipe line, Mr. Harvey suggests little compensation would be asked, while for the construction of a railway greater amounts might be asked. He recommends that an arrangement be entered into with the City of St. Boniface and the permanent use of its streets for the pipe line and even the temporary use of its streets by the railway. He suggests four estimates to be obtained from the Chief Engineer, viz.: as to the extra cost to the district of constructing a permanent steam railway from Deacon to the point in St. Boniface where it is to end; as to the extra cost to the district of constructing a permanent railway (not including the extra cost of right of way) from Deacon to the said point, such railway, either steam or electric, to be operated; the cost of building and equipping the proposed railway line in Transcona, including cars, and the cost of right of way. And in this regard the difference in cost of right of way for a permanent railway as compared with a temporary one."

The Greater Wininpeg Water District Commission owns a railway from St. Boniface to Shoal Lake, which connects with the Canadian Northern Ry. near St. Boniface. The commission, it was reported, paid $12,400 for running rights and transfers during the previous year. If the line were to be permanently operated and to be of use to the settlers going in, it would be necessary for the commission to have its own terminals in St. Boniface. Chief Engineer Chace said he would have estimates prepared showing the approximate cost of a steam and an electric railway from Deacon to St. Boniface.

We have been officially advised that nothing in the way of definite action has yet been taken about the Transcona proposition. (See Greater Winnipeg Water District and Transcona Electric Ry., Feb., pg. 73.)

The Windsor, Essex & Lake Shore Rapid Ry. proposes to do a small amount of track paving in Windsor, Ont., during this year. A. Eastman is Vice President and General Manager, Kingsville, Ont. (Oct., 1916, pg. 425.)

Sale of the St. John Railway.

The following circular was issued to St. John Ry. shareholders, Feb. 3, by H. M. Hopper, Secretary: "We have received an offer from the New Brunswick Investment Co., Ltd., of $1,300,000 for all of the company's property, assets and franchises, and in addition $10 a share for each share of the company's stock transferred to the New Brunswick Investment Co., making $140 a share net to the shareholders. The New Brunswick Investment Co. agrees to assume all of the St. John Ry. Co.'s indebtedness and liabilities. Payment to be made by the New Brunswick Investment Co. in full on transfer of the property on or before Feb. 28, 1917, or so soon thereafter as matters in connection with the St. John Ry. Co.'s mortgages can be arranged, as to which the parties making the offer anticipate no delay. Payment of the additional $10 for the stock will be made when the certificates are delivered to the New Brunswick Investment Co. in transferable form. Your directors have satisfied themselves as to the ability of the offerers to complete the transaction, and are of opinion the offer should be accepted by the shareholders. As it is essential, under the legislation affecting the company, that at least two-thirds of the shareholders, at a special meeting called for the purpose, shall vote in favor of the transfer, we hope you will sign and return forthwith the enclosed proxy if you are unable personally to be at the meeting. We enclose notice calling a special meeting of shareholders for Feb. 15 to consider this offer and to decide whether it should be accepted or not."

The shareholders decided at the meeting to accept the offer and the transfer of the property is being made accordingly.

Electric Railway Notes.

The Hamilton, Ont., City Council has appointed a special street railway committee, which is inviting citizens to make complaints against the service now being given by the Hamilton St. Ry.

The Port Arthur and Fort William, Ont., Utilities Commissions have arranged to hold a joint meeting to discuss fares on the sections of the two municipal electric railways connecting the two cities.

We are advised that the report to the effect that a company is being formed to operate a line of omnibusses for passenger and freight between St. Thomas, Aylmer and Port Burwell, Ont., is incorrect.

The Edmonton, Alta., City Council is having manufactured in the city steps for its electric railway cars. A question whether some patent rights are being infringed has been raised and Commissioner Harrison is ordering an investigation.

The Ottawa Electric Ry. has ordered 3 double truck semi steel cars, 33 ft. body, 45 ft. over all, equipped with Westinghouse 101-B-2 motors, 27-F-E-1 trucks, S.M.E. air brakes, etc., from Ottawa Car Manufacturing Co. They will be duplicates of the company's class 600 cars.

The London, Ont., Railway Commission has decided to purchase a freight motor car for operation on the London & Port Stanley Ry., in order to handle the increased freight traffic. The cost of the car is given as $23,500. The city has been asked to issue $25,000 new debentures, as a number of other matters on the railway demand attention, and several expenditures have been undertaken for the current year, to be paid out of revenue.

Mention was made in our last issue of a report that the Saskatoon, Sask., City Council had under consideration the building of electric cars for its street railway, owing to increasing cost, and to the inability of manufacturers to fill orders on short notice. We have since been advised that such a suggestion had been made to the city council, but that it is not likely that it will be considered until after the war.

The Ontario Railway and Municipal Board has ordered the City of Toronto to pay the whole cost of placing and maintaining the diamond and crossing at the intersection of the Toronto Civic Ry. and the Toronto Suburban Ry. at the junction of Lansdowne Ave. and Davenport Road, and that the cost and maintenance of the protective appliances be divided equally between the city and the company.

The Brantford, Ont., Railway Commission informed the local Trades and Labor Council recently that only policemen and firemen in uniform and the city hall janitor are carried free on the municipal railway. Books of tickets are issued free, as has been the custom for years, to the Victorian Order of Nurses, and books of tickets are sold to the different city boards for their employes at reduced rates. These latter books are issued in the names of particular persons.

Mainly About Electric Railway People.

A. H. Dennis has been appointed chairman of the civic committee in charge of the operation of the Fort William, Ont., Electric Ry.

F. X. Couture, heretofore Superintendent of Transportation, has been appointed Superintendent, Railway Department, Sherbrooke Ry. & Power Co., Sherbrooke, Que.

E. A. Robert, President, Montreal Tramways Co., has been elected a director of the Western Assurance Co. and the British American Assurance Co., Toronto.

Chas. Johnstone, heretofore acting Manager, Sherbrooke Ry. & Power Co., Sherbrooke, Que., has been appointed Comptroller. Office, 330 Coristine Bldg., Montreal.

T. Ahearn, President, and J. D. Fraser, Secretary-Treasurer, Ottawa Electric Ry., left Ottawa Feb. 20, via New York and New Orleans, for southern California, expecting to be away about five weeks.

F. A. Chisholm, heretofore Superintendent, St. Johns Electric Light Co. Division, Southern Canada Power Co., St. Johns, Que., has been appointed Superintendent Light and Power Department, Sherbrooke Ry. & Power Co., Sherbrooke, Que.

Thos. Ahearn, President, Ottawa Electric Ry., and Ottawa Car Manufacturing Co., has been elected a director of the Merchants Bank of Canada. He is also a director of the Bell Telephone Co. and Canadian Westinghouse Co., as well as of several other companies.

Martin N. Todd, President, Galt, Preston & Hespeler St. Ry., and General Manager, Lake Erie & Northern Ry., who has not been in good health for some time, left Galt, Ont., on Jan. 29, for the south, his intention being to go to the Isle of Pines, and to be away for two or three months.

Sir W. M. Aitken, Bart. who was elected a director, British Columbia Electric Ry., at the recent annual meeting of shareholders in London, Eng., has been created a Baron of the United Kingdom, with the title of Baron Beaverbrook, of Beaverbrook, N.B., Canada, and of Cherkley, Surrey, Eng.

C. G. Newton, formerly agent, London & Lake Erie Ry. & Transportation Co., St. Thomas, Ont., has been appointed Accountant at London, Ont., which position was occupied by L. Tait, who was also Secretary-Treasurer, prior to his appointment as Secretary-Treasurer, London St. Ry. The L. & L. E. R. & T. Co.'s directors will probably appoint a Secretary-Treasurer at their next meeting.

William Henry Dinsmore, whose appointment as Traffic Superintendent, British Columbia Electric Ry., Vancouver, was announced in our last issue, was born at Meaford, Ont., Apr. 14, 1877, and entered B.C.E.R. service, Feb. 1, 1901, since when he has been, to Oct. 31, 1909, conductor; Nov. 1, 1909, to Oct. 31, 1915, Inspector; Nov. 1, 1915, to Feb. 29, 1916, Chief Inspector; Mar. 1 to Dec. 1, 1916, acting Traffic Superintendent, City Lines, Vancouver, B.C.

Leonard Tait, heretofore Secretary-Treasurer, London & Lake Erie Ry. & Transportation Co., has been appointed Secretary-Treasurer, London St. Ry., vice G. C. Holding, who has resigned, in order to devote his time to his private affairs. He commenced railway service in 1899, with the Michigan Central Rd., at London, and has also served with the G.T.R. and C.P.R., and returned to the M.C.R. in Feb. 1905 as chief clerk to Freight and Passenger Agent, London. He was appointed Soliciting Passenger Agent, New York Central Rd,, Toronto, and in Nov., 1912, he was appointed accountant, London & Lake Erie Ry. & Transportation Co., and later, Secretary-Treasurer of the company.

Lewis Clark Haskell, Secretary-Treasurer Southern Power Co., who has also been appointed Secretary-Treasurer, Sherbrooke Ry. & Power Co., Montreal, was born in Pennsylvania, Jan. 2, 1883, and graduated with the degree of B.A., from Colgate University, in June, 1905. From 1905 to 1908, he was Assistant Manager, Haskell Lumber Co., and Salmon River Ry., Fassett, Que.; 1900 to 1911, Secretary-Treasurer and Manager, Labrador Electric Co., Murray Bay, Que.; 1912 to 1913, Secretary-Treasurer, South Shore Power & Paper Co., Montreal; 1913 was appointed Secretary-Treasurer, Southern Canada Power Co., Montreal, which company has taken over the Sherbrooke Ry. & Power Co.

W. C. Franz, who has been elected President of the Trans-St. Marys Traction Co., of Sault Ste. Marie, to succeed the late T. J. Kennedy, was born at Bucyrus, Ohio, Mar. 14, 1871. In 1889 he entered the Toledo & Ohio Central Ry.'s service, remaining until 1901, when he went with the Hocking Valley Ry. in West Virginia, serving as Trainmaster and Superintendent. From 1906 to 1908 he engaged in railway construction work and coal development in West Virginia, and on Sept. 1, 1908, was made General Manager of the Lake Superior Corporation, succeeding to the Vice Presidency in 1913. He is also Vice President of the Algoma Steel Corporation, Ltd.; President of the Cannelton Coal & Coke Co. and the Lake Superior Coal Co.

Hon. James Leitch, K.C., Judge of the Supreme Court of Ontario, who died at Toronto, Feb. 7, after a prolonged illness, was born at South Branch, Stormont, Ont., June 2, 1850, and was educated at Williamstown and Cornwall, Ont. He became a barrister in 1876, and was created a Q.C. in 1889, practising his profession in Cornwall. He was reeve of Cornwall in 1884, mayor 1885-86, member of the High School Board there since 1887; life governor and a director, Cornwall General Hospital; and was also, for some time, President, Stormont Electric Light & Power Co., and Cornwall Gas Co. On the formation of the Ontario Railway and Municipal Board in 1906, he was appointed Chairman, and held that position until 1912, when he was appointed to the bench.

James B. Woodyatt, who has been appointed General Manager, Southern Canada Power Co., Montreal, which owns the Sherbrooke Ry. & Power Co., operating the street railway, and other utilities in Sherbrooke, Que., was born at Brantford, Ont., July 2, 1886. He was, from Apr. to July, 1905, chain man, Niagara & Welland Power Co.; July to Sept., 1905, topographer, Toronto & Hamilton Ry.; Apr. 1906 to Dec. 1908, apprentice, Canadian Westinghouse Co., Hamilton. Ont.; Dec. 1908 to June 1909, investigating ice conditions, Gulf of St. Lawrence, Dominion Government; June 1910 to June 1910, sales engineer, Allis-Chalmers-Bullock, Ltd., Montreal; June 1910 to July 1913, Superintendent of Power, Sherbrooke Ry. & Power Co., Sherbrooke, Que.; July 1913 to Oct. 1916, General Superintendent, Southern Canada Power Co., Montreal.

Electric Railway Finance, Meetings, Etc.

Cape Breton Electric Co.:

	Dec. 1916	Dec. 1915	Jan. 1 to Dec. 31, 1916.	Jan. 1 to Dec. 31, 1915.
Gross	$40,284.39	$36,267.87	$393,666.68	$357,214.07
Exp.	22,346.19	19,625.69	231,264.97	206,427.82
Net	17,938.20	16,642.18	162,401.71	150,786.25

Hamilton St. Ry.—The City Treasurer reported recently on the financial relations between the city and the company as follows:—

Total receipts, 1915	$569,694.15
Total receipts, 1916	706,789.14
Increase	$137,094.99
City's share, 1915	$45,575.53
City's share, 1916	$56,543.13
Increase	$10,967.60

The city's share in 1916 was $4,772 more than the highest previous year, viz., 1913.

Kitchener & Waterloo St. Ry.—The annual report of the operations for 1916, presented to the Kitchener, Ont., Light Commission, Feb. 7, showed net profits of $3,606.47. Of this 25% is paid to the town of Waterloo, in return for running rights.

It was also reported that the net profits for Jan., 1916, were $330.53, against $252.97 for Jan., 1916.

London & Port Stanley Ry.—The London Railway Commission announces that the gross railway earnings from July 1 to Dec. 31, 1916, were $178,211, and total expenses $146,321, leaving a net operating profit of $31,890. There was an increase of $5,300 in the operating expenses over the same period, 1915, of $10,000 in the total expense, and of $39,000 in the gross earnings. The net earnings were $27,500 more for the 1916 period than for the 1915 one, which was the first under the Commission's operation.

Port Arthur Civic Ry.—Traffic statistics for January:

	1916.	1917.
Revenue	$6,797.20	$8,104.00
Military tickets	6,854.00	4,375.00
Ordinary tickets	8,607.00	7,504.00
Workmen's tickets	27,747.00	50,612.00
School children	4,446.00	8,292.00
City officials	1,652.00	2,079.00
Cash fares	102,687.00	114,541.00
Total passengers	152,754	188,071
Transfers issued	15,386	18,976

Toronto Ry.—Earnings for Jan., $510,052.52; city percentage, $76,507.88. From figures compiled by one of the Toronto newspapers, it appears that since the commencement of the company's franchise, early in 1891, $72,917,572.31 were received in fares, and $9,249,213.13 paid to the city as percentage on earnings. The receipts for the first year of operation were $291,765.17, not much more than half of the receipts for Jan. 1917, the city percentage being $23,017.08.

The Sherbrooke Ry. & Power Co. has been taken over by the Southern Canada Power Co., Ltd., but maintains its corporate capacity as heretofore. Following are the officers:——F. W. Teele, President; J. B. Woodyatt, General Manager; L. C. Haskell, Secretary-Treasurer; Chas. Johnstone, Comptroller, all with offices at 330 Coristine Bldg., Montreal; F. A. Chisholm, Superintendent, Light and Power Department, and F. X. Couture, Superintendent, Railway Department, with offices at Sherbrooke, Que.

Dominion Power and Transmission Co's Annual Meeting.

The report presented at the annual meeting in Hamilton, Ont., recently, showed that the gross business during 1916 equalled that of 1913, the best year preceding the war, and the indications for 1917 are that the business will eclipse all former years. The net results of 1916 were not proportionately so good, owing to the increased price of materials and commodities. The restrictions under which the subsidiary companies operate does not permit of an advance in rates to customers, corresponding with the increased cost of operation.

The gross earnings were $2,693,211.93, which left a surplus of $710,348.29 after all expenditures. Profit and loss account had a balance of $536,060.67, after placing $250,000 additional to the credit of the regular reserve account. The reserve for maintenance and renewal has been increased by $111,079.02.

The officers for the current year, who were re-elected, are: President, J. R. Moodie; Vice President, C. A. Birge; Treasurer, Jas. Dixon; Managing Director and Secretary, W. C. Hawkins; General Manager, E. P. Coleman.

Toronto Railway Co's Annual Meeting.

Following are extracts from the report for the year 1916, presented at the annual meeting, Feb., over the signature of the President, Sir Wm. Mackenzie:—

A summary of the year's operations is attached, and when one takes into consideration existing conditions owing to the continuance of the war, it is certainly very gratifying.

Gross earnings		$5,973,161.27
Charges for operating, maintenance, etc.		3,350,657.87
Net earnings		$2,622,503.40
From which net earnings there was deducted $2,227,958.29, distributed as follows:—		
Dividends	$958,826.40	
Bond interest, etc.	156,122.14	
		$1,114,948.54
Payments to city:		
Percentage on earnings	$909,881.10	
Pavement charges	98,418.40	
General taxes	104.710.25	
		1,113,009.75
		$2,227,958.29

The increase in the gross passenger earnings is gratifying. The total for 1916 was $5,881,505.28, against $5,611,296.60 for 1915. The charges against earnings for operation, maintenance, etc., were $3,350,657.87, the percentage of operating cost being 57% of the passenger earnings. Payments made to the City of Toronto throughout the year amounted to $1,113,009.75, an increase of $48,937.53 over 1915.

The shareholders, at a special general meeting on May 29, 1916, authorized an increase in the capital stock of $3,000,000 by the creation of 30,000 shares, but no action was taken by the directors as to the disposition of such shares.

On Dec. 28, 1916, a fire occurred in the car barns at St. Lawrence and King Sts., completely destroying the buildings and contents, including 168 cars.

The sixth drawing of the company's currency and sterling bonds, under the terms of the mortgage deed dated Sept. 1, 1892, took place on June 21. Under said terms the company draws annually during the last 10 years of its franchise 5% of the amount of bonds issued, thus reducing during the 10 years mentioned, the outstanding bonds to 50% of the original issue, and all bonds so drawn are to be redeemed on or after Aug. 31 following the date of drawing, from which date no interest is payable on bonds so drawn. There has been drawn to date a total of $1,365,086.65.

Careful attention has been paid to the maintenance of the plant, rolling stock, equipment and other properties.

The directors declared, out of the accumulated surplus earnings, 4 quarterly dividends.

INCOME ACCOUNT.

Gross earnings		$5,973,161.27
Operating, maintenance, etc.	$3,350,657.87	
Interest on bonds, etc.	156,122.14	
Percentage on earnings	909,881.10	
Pavements, taxes	215,707.45	
	4,632,368.56	
	$1,340,792.71	

PROFIT AND LOSS ACCOUNT.

Balance from 1915		$5,026,907.37
Surplus earnings, after payment of all expenses, interest, taxes, etc.		1,340,792.71
		$6,367,700.08
Dividends, 4 of 3 per cent. each, on the paid up capital		$ 958,826.40
Balance from 1915	$5,026.907.37	
Surplus carried forward.	381,966.31	
	$5,408,873.68	
	$6,367,700.08	

COMPARATIVE STATEMENT.

	1916.	1915.
Gross income	$5,973,161.27	$5,694,136.43
Operating, maintenance charges, etc.	3,350,657.87	3,250,611.95
Net earnings	2,622,503.40	2,443,524.48
Passengers carried	149,529,754	142,061,258
Transfers	61,342,763	62,398,638
Percentage of charges, etc., to passenger earnings	57.	57.9

Prior to the annual meeting, a considerable canvass for proxies was conducted in Montreal by a shareholder there, H. A. Hutchins, K.C. On the morning of the meeting, a Montreal delegation called upon the Mayor of Toronto, with a view to sounding him as to the possibility of a new franchise on the expiry of the present one in 1921.

At the meeting of shareholders, which was attended by a considerable representation of Montreal holders of stock, some criticism was aimed at the report, concerning the subsidiary companies, and also of an issue of $3,000,000 of new stock, which was authorized in May, 1916. The President stated that the stock mentioned had not been issued, and that under present circumstances it would not be issued, as it would be practically impossible to get it subscribed. As to the subsidiaries, it was claimed that there was nothing in the annual statement to show what the assets were, and that the books were not open to inspection. After some explanation by the President, the report was adopted.

The board for the current year consists of: Sir William Mackenzie, President; Senator F. Nicholls, Vice President; Sir Henry M. Pellatt and E. R. Wood, Toronto; Sir Rodolphe Forget, G. H. Smithers, Montreal; and F. W. Ross, Quebec. There is now one more director than last year, G. H. Smithers and F. W. Ross, being the new ones, James Gunn, not being re-elected.

The Winnipeg Electric Ry. Co.'s annual meeting, which was to have been held Feb. 14, and which was postponed to Feb. 21, owing to the absence of the President, Sir Wm. Mackenzie, was further postponed, as he had not got back to Winnipeg from the Pacific coast.

London, Ont., Street Ry. employes are organizing a labor union, with a view of taking action on the application made recently for increased wages.

Toronto's Requests for Electric Railway Legislation.

Amongst the several matters in regard to which the Toronto City Council is applying to the Ontario Legislature, are the following:—

Toronto Suburban Ry.—That notwithstanding any agreement, statute, order or decision of any court, board or committee to the contrary, the company shall from time to time maintain a pavement upon the portion of Davenport Road within the city limits occupied by the company's lines and tracks, of a character and quality similar to that constructed and maintained from time to time by the city upon the remaining portion of the road.

To enable the city to enter into an agreement with the company for an alternative route in substitution for the route on Davenport Road easterly from Bathurst St., along any available highway or upon a private right of way, or upon such other way as may be provided, to the northerly city limits, and upon the consummation of such agreement, the company's franchise upon the portion of Davenport Road referred to shall cease. To declare forfeited and cancelled the company's franchise upon all streets south of Dundas St., in Ward 7.

Toronto & York Radial Ry.—To authorize the city by bylaw to enter upon, expropriate and acquire the portion of the T. & Y. R. R. (Metropolitan Division), upon Yonge St., within the city limits, and all the real and personal property used in connection with it, and necessary for its operation, including all franchises, rights and privileges, which it now has or may enjoy, respecting the construction, maintenance and operation of a railway within the city limits upon that street, upon paying such compensation therefor as may be agreed upon between the company and the city, and in the event of disagreement, by the Ontario Railway and Municipal Board. To build and operate a double line of railway on Yonge St. from the T. & Y. R. R. southern terminus to the northern city limits, and to grant running rights over it to the T. & Y. R. R. on terms to be mutually agreed upon.

Toronto Ry.—To require the company to build and place in operation 100 new cars during 1917, and 100 additional cars during 1918, and in default of doing so, the company to pay to the city a penalty of $100 a day for each car lass than the said numbers.

Toronto Civic Ry.—To authorize the city council to pass bylaws, without submitting them to the ratepayers' vote, for the issue of consolidated loan debentures to the extent of $1,498,864.33, for the following purposes, amongst others:—To cover overdrafts and complete work on civic car lines, $140,000. Balance of purchase of cars, $17.000. Amount already expended and required to complete Bloor St. line, $125,000.

Vancouver Transportation Club.—The following are the officers for the current year: President, C. E. Lang, Northern Pacific Ry.; First Vice President, W. D. Power, British Columbia Electric Ry.; Second Vice President, J. W. Nutt, Allan Steamship Co.; Third Vice President, A. Whitwall, Great Northern Ry.; Secretary, D. Alexander, Chicago, Milwaukee & St. Paul Ry.; Treasurer, Jas. Napier, Allan Steamship Co.; Directors, Messrs. Jenney, Faulds, P. Whitelock, Faar, Nace, Daniels and Foster.

The London Street Railway Co's Annual Meetings.

Following are extracts from the annual report for the year 1916:—

Earnings—	1916.	1915.
Passenger	$420,704.92	$393,299.00
Miscellaneous	5,609.85	5,559.00
Gross earnings	$426,314.77	$398,858.00
Expenses—		
Maintenance way and structures	$ 33,845.55	$ 35,619.41
Maintenance, equipment.	50,131.88	29,046.60
Transportation, power	37,994.08	38,465.25
Transportation, car service	138,653.55	131,308.94
Total operating expenses	$292,400.95	$275,212.04
Net earnings	$133,913.82	$123,645.96
Interest on bonds	$ 32,138.29	$ 32,769.63
Interest on overdraft	41.70	23.50
Taxes	8,123.06	.....
Total deductions	$ 40,303.05	$ 32,793.13
Net income	$ 93,610.77	$ 90,852.83

During the year $55,831.82 was expended in construction and equipment as follows:—Track and roadway construction, $54,965.18; electric line, $683.01; building and fixtures, $43.75; fare boxes, $56.15; new trucks, $40.90; miscellaneous equipment, $42.83; total, $55,831.82; credit by scrap sold, $3,566.22. Net expenditure, $52,265.60.

Even though approximately 3,000 citizens have gone with the overseas forces, the company's business has continued to increase substantially. Several battalions were brought to London for training; so that approximately 12,000 men were in camp during May and June. This made extra car service necessary and caused abnormal earnings for those two months; after which a very large percentage of the troops were moved away to Camp Borden for more extensive field training. Forty-three of the companys employes have joined the Canadian Expenditionary Force.

Owing to the extensive improvements proposed by the city for street paving last year and which would require the rebuilding of several miles of tracks, it was found necessary to use a portion of the company's surplus for this purpose rather than for the usual interim dividend in July. Considerable of the street work planned by the city last year could not be completed on account of the shortage of labor, and so remains to be included in next year's programme. This, together with the required annual redemption of $35,000 bonds and the abnormal costs of supplies and labor, without the ability to increase the prices charged for transportation, makes the coming year's operation rather more difficult.

During the past season the city paved Dundas St., from the exhibition grounds eastward to Ashland Ave., 0.64 mile. The track was renewed with 80 lb. T rail, on concrete foundation and with brick paving. The double tracks to the exhibition were extended 0.33 mile to the G.T.R. crossing. The Hamilton road was paved from Adelaide St. to Egerton St., 0.84 mile. Some new 80 lb. T rail was used in this section and all the tracks relaid with concrete and brick paving. An extension of the single track on the Hamilton road from Egerton to West St., 0.42 mile, was made with 80 lb. T rail and placed in operation on Dec. 1. The above additions to the trackage, together with the doubling of the curve at Mamelon St., amount to an extension of 0.83 mile, making the total mileage now 36.02.

Owing to the presence in the city of such a large number of soldiers during the early part of the summer, it was impossible to spare the cars for remodelling purposes to such extent as had been anticipated, but all necessary repairs and painting were continued as rapidly as possible.

Hydro electric power has continued to give us satisfaction, even though interruptions have been somewhat more numerous and of longer duration than last year. As the Power Commission is making improvements to avoid such delays it is expected the service will be considerably improved in the future.

No serious litigation is pending against the company and as our relations with the public are most gratifying a good year is looked for.

PROFIT AND LOSS ACCOUNT.

Surplus, Dev. 31, 1915	$109,976.48
Net income for year	93,610.77
	$203,587.25
Dividends, 6 per cent.	$ 33,860.40
Directors' fees	1,000.00
Surplus, Dec. 31, 1916	168,726.85
	$203,587.25

Expenses per cent. of earnings, 68.60. Passengers carried, 11,518,428. Car earnings per revenue passenger, 3.67c. Transfers, 1,792,579. Total passengers, 13,311,006. Car earnings per passenger, 3.08c. Car mileage, 1,938,492. Gross earnings, per car mile, 21.99c. Operating expenses per car mile, 15.08c. Net earnings, per car mile, 6.91c. Miles of track, 36.080. Gross earnings per mile of track, $11,835.46.

The report was adopted at the annual meeting at London, Ont., Feb. 7, when C. Currie, Akron, Ohio, was elected a director, and subsequently was elected President in place of E. W. Moore, Cleveland, Ohio, who resigned as director and President. The following are the directors for the current year: C. Currie, Akron, Ohio, President; T. H. Smallman, London, Ont., Vice President; C. B. King, Manager, W. M. Spencer, S. H. Ivey, London, Ont.; P. W. D. Broderick, Toronto, and Sir Herbert S. Holt, Montreal. G. C. Holding, Secretary-Treasurer, resigned in order to devote his time to private affairs, and the Manager, C. B. King, was appointed temporarily to succeed him. Subsequently L. Tait, theretofore Secretary-Treasurer, London & Lake Erie Ry. & Transportation Co., was appointed Secretary-Treasurer.

Answers to Questions on Electric Railway Topics.

Following are replies by W. R. McRae, Master Mechanic, Toronto Ry., to questions sent to the American Electric Railway Association's question box:—

Trolley Shoes vs. Trolley Wheels.—What experience have member companies had in the use of trolley shoes in place of trolley wheels? Do the advantages overcome the objections, especially the increased wear upon the trolley wire?

On many occasions during the early days of electric traction we used sliding trolley contacts, instead of wheels, and saw no undue wear of trolley wire. I doubt that there will be more wear on wire by using trolley shoes as designed now, especially in view of the superior quality of the trolley wire now in use.

What advantages have member companies experienced by equipping their cars with small extinguishers? Where they are used? What method is pursued to prevent theft?

All motor cars on this system are equipped with fire extinguishers. Have found them very useful in putting out or checking fires due to overheated resistance and controller fires. They are carried in vestibule directly behind motorman, are easily detached and are checked the same as balance of removable equipment. We have had no loss of extinguishers due to theft.

Welding Steel Tools.—Is the welding of high speed steel bits to machinery steel shanks for wheel turning tools practical, and if so, what is the best method to employ?

We use high speed steel bits welded to machine steel shanks for ordinary lathe work, but not on wheel lathe. The tool steel bit is tapered to mat with the V in shank, and oxy-acetylene welded.

Boring Air Compressor Cylinders.—What method is employed by member companies in boring out air compressor cylinders on a mill for boring wheels, or in a lathe?

We bore them on a lathe and grind to finish.

The Street Railway Situation in Halifax.

A meeting of the City Board of Control was held, Feb. 1, which citizens were invited to attend and offer suggestions for the betterment of the street railway service. H. R. Mallison, Secretary-Treasurer, Nova Scotia Tramways & Power Co., and J. A. DeYoung, Assistant Secretary, Halifax Tramway Co., were present, but very few citizens turned up to voice their complaints. The chief cause of any trouble that may have arisen in the service appears to be in regard to overcrowding of certain cars during rush hours. Mr. Mallison stated that crowding could be avoided if the public did not all wish to get on the same car. The company is supplying a 3 minute service, the best that can be given on single track curves and with present trackage facilities. It is almost impossible to get additional cars. The company is seeking them, and has estimates under consideration, as well as studies of trackage for them. Labor is scarce and material not only high in price, but it is exceedingly difficult to obtain deliveries. Replying to a suggestion by one of the controllers that the cars be equipped with air brakes, he stated that the brakes at present in use had been thoroughly gone into by the Public Utilities Commission and deemed by it to be the best for the service.

British Columbia Electric Ry.'s Office Employes' Association. — The B.C.E. Ry.'s office staff has organized with the following officers: Honorary President, Geo. Kidd; President, A. E. Chamberlin; Vice President, E. Rogers; Secretary, P. Lewis; Treasurer, J. V. Armstrong. There are about 400 persons in the 18 departments eligible for membership, and it was stated that about 300 had signified their intention to join. The association is formed to look after the mutual welfare of the company and the office employes. It is the purpose of the members to work together in their own and the company's interest, as they believe they will be able to further their ends by working in a body. Social gatherings may be held from time to time during the year. A schedule of meetings has been made out and a great deal of work planned for the near future.

The Sandwich, Windsor & Amherstburg Ry. is having the 2 double truck cars, which are being built at Cleveland, Ohio, and which were described in our last issue, equipped with air brakes. Similar equipment will be placed on 6 double truck cars which are now in operation.

Marine Department

Canadian Lake Protective Association's Annual Report and Meeting.

The following report, signed by W. E. Burke, chairman of the committee, and Francis King, counsel for the association, was presented at the annual meeting in Toronto, Feb. 15:

The year 1916 presents a good record for the vessels enrolled in this association and trading in the waters over which the association exercises any jurisdiction. The casualties reported are few in number and in most of the cases the damages are slight and the accidents of an almost insignificant character. A few exceptional cases, notably one or two hereafter mentioned, show claims on underwriters of considerable extent, but their number is so limited that the season may be said to present a very low record, not only in the number of casualties, but also in the amount of damages resulting. Furthermore, it is noteworthy that with the exception of a few cases which are still the subject of enquiry, the casualties have all occurred under such circumstances that no master has been censured and only one has been criticized. The committee therefore extends to the members of the association and to the masters of the enrolled vessels congratulations upon the success which appears to be attending the efforts of all parties to reduce controllable losses.

An appendix to this report contains an analysis of the casualty records for the season. The number of ships at sea accounts to a large extent for the extremely small list, but careful navigation, with fair depths of water, must constitute the chief reasons for the marked reduction in the number of reported accidents. As the year progressed a doubt arose whether masters were fulfilling their obligations and filing reports faithfully, but careful investigation was made and available lists were checked, with the result that your committee was satisfied that all casualties of which it should take cognizance were being reported as they occurred, and that the records correctly represented the small number and extent of avoidable disasters.

The outstanding feature of the list is the complete absence of total losses. The collisions are only 10 in number, and, with one exception, all of a minor character with but slight loss, 6 of the 10 occurring at docks in harbors, 2 in the Welland Canal, 1 in ice, the boats in these cases being at slow speed and the damages being almost negligible. The tenth case was more serious: the Midland Prince and the Imperial collided in Lake Superior with substantial hull damages and much resulting delay and loss of use. Full particulars of the casualty have been withheld by owners, as litigation must settle the liabilities, and in the meantime your committee has therefore not been able to take any action. Another serious collision between the W. Grant Morden and the Nottingham occurred in Lake Superior on July 27, with serious results. The W. Grant Morden (a new ship) is owned by a member of this association, but is not enrolled, and no report being filed, the collision is not included in the appendix. This case is also the subject of litigation. Groundings and strandings are again classified together and are 12 in number. Of these, 7 occurred under circumstances which appear to exonerate the navigators completely, and only 5 called for investigation. In one of these the Ionic ran on the north end of Caribou Island on Apr. 24, before lights were lit, and the committee informed the master that in their opinion he had shown poor judgment

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A. A. Wright,
Vice President and Treasurer, Montreal Transportation Company, Ltd., and President, Dominion Marine Association.

in shaping a course for Whitefish Point from a point where he, apparently in error, thought himself off the west end of Michipicoten Island, without using greater caution until he had ascertained his position with certainty. In another, the Keybell ran on Morgans Point, 4 miles west of Port Colborne, in fog, and the committee, notwithstanding the master's excuses as to a faulty compass, has asked for explanations as to the failure to use the lead. His explanations are filed and await further action. In the third case, the Masaba ran on Grassy Shoal, northeast of Victoria Island, Lake Superior, in a fog, and the master has been asked to explain his use of the inner passage and the time at which thick weather set in. Explanations are also filed in this case. In the fourth, the Saskatoon ran over Jackass Shoal upbound in the St. Lawrence River, at a time when the gas buoy was misplaced and not burning. The committee made enquiry as to the notice, if any, regarding this buoy on the canal bulletin boards, and found that a notice posted in due time at Cornwall was read and reported by the engineer of the ship to the effect merely that the light was out. As the master admits seeing the buoy, the question arising is important both in regard to his conduct and to the usefulness of the new bulletin boards, and the committee has asked for an explanation. The fifth and last case is that of the Iroquois, which grounded off Salmon Point in the Lower St. Lawrence in charge of a sailing master who had gone to his room at the time of the accident, leaving only a wheelsman and a watchman on watch. In this case a wreck investigation has been asked by your committee and has recently been held. This investigation produced another example of the doubts in the minds of many masters as to the respective duties and responsibilities of master and pilot on the St. Lawrence. Masters do not appear to realize yet that they retain responsibility and are bound to intervene in cases where it is apparent that the pilot is in doubt or making a manifest error. The difficulty is even greater where, as in the case in question, the lake master turned the ship over to a so-called "sailing master" at Quebec. The Wreck Commissioner, in the finding he has just handed out, expresses strong views on this point and reprimands the lake master for his apparent lack of interest. The certificate of the "sailing master" is suspended for nine months. A suggestion has now been made that present day trade conditions require the extension of the limits for an inland waters certificate so as to include points as far down as the Island of Anticosti.

There were 6 collisions with docks or bridges and 2 with lock walls important enough to require report. Three of the remaining 4 cases were minor accidents to machinery or gear, and the last case is one of fire resulting apparently from careless use of matches and tobacco. This case led your committee to issue a bulletin prohibiting smoking in the sleeping quarters of the crew. But in none of these cases did it appear that the officers of the ship could be blamed in any way, and making due allowance for the peculiar difficulties attendant upon each case in the circumstances reported, your committee passed each of these casualties without further action.

There were no collisions with lock gates. On more than one occasion during the season lock gates were broken, and with considerable attendant damage, but in no case did the accident result from the action of a steamer enrolled in this association. Doubtless the experience of masters and the work of this association in this respect has led to the exercise of greater caution in bringing ships into position in the locks. Nevertheless conditions remain unsatisfactory and the situation is one of some insecurity. An accident from this cause with tremendous resultant damage is possible at any time in any one of a great number of locks in the Dominion canals, and another year's record may show boats of this association involved in these cases even without

clear fault on the part of the navigator.

The report of the committee for 1915 referred to the effort made to secure the installation of safety devices on all locks to prevent gates from getting out of mitre or giving way under pressure, and during the past year your committee has renewed these requests for action, enlisting as well the support of the Dominion Marine Association. After correspondence on the subject a small delegation waited upon the Deputy Minister of Railways and Canals and later submitted its representations in writing. The department admits the correctness of the statements made, and claims to have already equipped the more dangerous locks with the Gowan safety device. On the Welland Canal the department is disinclined to recommend any further expenditure for this purpose on account of the present building of the new Welland Ship Canal.

Your committee also pressed upon the attention of the same department the request for an improved and uniform system of lighting to indicate the position (open or closed) of lock gates, and for guards to prevent collision with lock entrance walls. The delegation from the Dominion Marine Association above mentioned also discussed these items with the Deputy Minister and placed the requests in writing. With reference to the lighting system the department has raised some objection to the method proposed in the report of your committee for 1915, and has determined simply to maintain the existing departmental regulation. Nevertheless it was admitted that investigation proved that lock masters were not carrying out instructions in this respect and were in some cases adopting plans of their own making. The department has therefore issued strict instructions requiring absolute and uniform compliance with the existing regulation above referred to. As to the desired protection for lock entrances the position taken is similar to that with reference to the other safety appliances mentioned. The department claims to have protected the St. Lawrence locks well and will not advise expenditure on the Welland at present.

In several cases casualty reports filed have called attention to the need of improvement in channels and establishment of additional or better aids to navigation, and whenever it appeared advisable your committee has taken steps to bring the question raised to the attention of the proper department at Ottawa or before the Lighthouse Board. Telegraphic reports to the association's office at Kingston have led to the prompt replacement or relighting of misplaced or unlighted buoys. Positions of stake buoys have been corrected. Light keepers and fog horn operators have been warned. Obstructions in channels have been removed; and it may be said in general terms that no opportunity has been lost to make good use of all suggestions received from the men who navigate the ships enrolled in the association.

The co-operation of the Lake Carriers' Association and the Great Lakes Protective Association was sought as occasion required, and your committee gave due consideration to occasional recommendations of these associations. Bulletin 2 of 1916, published your committee's adoption of the recommendation of the Great Lakes Protective Association that no vessel should attempt to pass another in the shallow and narrow channels between the lower end of Port Huron Middle Ground and Corsica Shoals Lightship, and between the upper end of Russell Island and the lower end of St. Clair Canal.

The plans worked out in 1915 to bring the upper St. Lawrence pilots under the jurisdiction of the Dominion Wreck Commissioner proved somewhat unsuccessful at first, as pilots boarding a ship at Kingston or Montreal did not consider themselves bound to comply with the understanding that they should sign the ship's articles. This difficulty was met by a resolution early in the season that these pilots should sign an agreement offering their services for the boats enrolled and agreeing to sign articles on first boarding ships. An agreement was prepared, duplicates were placed at Montreal and at Kingston, and pilots were invited by public notice in the newspapers of both cities, to sign the offer and undertaking. An interview with a delegation of pilots explained the situation, and the agreement being satisfactorily signed at an early date no trouble has since been experienced. The agreement with signatures is given in an appendix. As already stated, no occasion has arisen this year for criticism or censure in the case of any of these men.

The Dominion Marine Association Expresses Its Appreciation.

The following is an extract from the Dominion Marine Association's executive committee's annual report, presented at the annual meeting in Toronto, Feb. 15, 1917, over the signatures of the President, W. E. Burke, Assistant Manager, Canada Steamship Lines, Ltd., and the Counsel, Francis King, M.A., of Kingston, Ont., and which was unanimously adopted:

"Canadian Railway and Marine World.

"The proprietor of this publication having formally offered the use of it columns for such items of news as the association would care to publish, your committee gratefully accepted the offer and adopted the following resolution:

" 'That in view of the thorough manner in which Canadian Railway and Marine World covers the marine field throughout Canada, the care which exercises to secure accuracy, and the throughout Canada, the care which it the Dominion Marine Association's disposal, it is hereby appointed the association's official organ.' "

In accordance with the resolution of the committee of 1915, casualty reports have been required only with reference to voyages within the limits covered by certificates issued to masters for inland waters, and therefore no record has been attempted of casualties or losses in the Gulf or on the Atlantic Coast or further at sea. Notwithstanding this, members of the association, in accordance with a resolution of your committee, have continued the enrollment of their ships, irrespective of their present trade routes, as their return to lake waters may be expected, and all the ships are thus equally interested in the improvement of navigation conditions. A list of ships enrolled, showing those still in lake trade and those at sea or laid up in ocean ports, is set out as an appendix to this report.

The Dominion Wreck Commissioner did not hold a sitting during 1916 to investigate a casualty affecting any one of the vessels enrolled in the association. One case, held over from 1915 pending correspondence, that of the s.s. Meaford, which stranded east of Detour, was ultimately dropped, for lack of available evidence, as the crew was scattered, some members being overseas. The only other case in which an investigation was asked, that of the Iroquois at Salmon Point, St. Lawrence, occurred late in November, and the investigation was not held until Jan. 12. A decision has just been rendered and is reported above.

Insurance rates on the lakes for 1916 remained as in 1915. The standard on steel hulls carrying to the foot of Lake Erie for a period of one year, with a navigation season from April 15 at midnight to Nov. 30 at midnight was 3¾%. The usual extra ½% for the season was charged for navigation not east of Kingston, with a further ½% for navigation not east of Montreal, an additional fraction being charged for navigation as far as Cape Breton. The sailing season could be extended to midnight Dec. 12 on payment of an additional 1%, and a boat could make a one way trip after Nov. 30 at the following fractional charges: Sailing up to midnight Dec. 5, ½%; sailing up to midnight Dec. 8, ¾%; sailing up to midnight Dec. 12, 1%; or make a one way trip on one lake sailing up to Dec. 12 at ¼%. The policies also permitted navigation from April 1 to April 15 at pro rata of the season rate. Some of the United States policies on Canadian boats contained an additional clause to the effect that a vessel on a voyage at midnight Nov. 30 and sailing again after arrival should pay a pro rata season rate in addition to the special premium provided for the late or extended navigation. The proposals of the association in 1915 for removal of the deductible average clause from all policies and for additional proportionate lay-up rebates met with approval in all quarters among vessel owners and brokers, but up to the present underwriters do not appear to have determined to make either of the desired alterations.

The various bulletins of 1916 have been sent regularly to all masters of enrolled steamers on the lakes, to all members of the association, and to brokers and underwriters. Circular letters have been issued from time to time, and correspondence has been carried on with individual members, with masters, and with the authorities at Ottawa and in local centres as occasion arose. Owners and masters are again asked to make full use of the association's services for the purposes for which it was organized, and to assist its officers as much as possible in making its records complete and its work thoroughly effective.

Agreement With Pilots.—The agreement with St. Lawrence River pilots between Kingston and Montreal, referred to in the foregoing report, is addressed to the Canadian Lake Protective Association and its members and reads as follows:

"As the Dominion Wreck Commissioner has declared that he has no authority upon a wreck investigation to deal with pilots between Kingston and Montreal who are not officers of the ship in question, it has become necessary that pilots in the waters named should on coming on board the steamer sign the ship's articles as 'mate and pilot.' Accordingly, the undersigned mariners, who hold certificates good upon the waters mentioned, hereby offer to serve as pilots in these waters upon any boats enrolled in the Canadian Lake Protective Association and to comply with the above requirement, and each of the undersigned hereby undertakes and agrees with the said association and with its members that immediately upon joining any steamer he will sign the ship's

articles, on request, as 'mate and pilot' for the trip."

Analysis of Accidents Reported, 1916

Groundings and strandings	12
Collisions	10
Striking locks or gates	2
Striking bridges, docks, piers and harbor and channel banks	5
Accidents to machinery or other gear through stress of weather or otherwise	3
Fire	1
Total	33

GROUNDINGS AND STRANDINGS.

St Lawrence River	2
Welland Canal	1
Lake Erie	2
Lake Huron, North Channel	1
St. Marys River	2
Lake Superior	3
Kaministikwia River	1
Total	12

COLLISIONS.

Harbors	5
St. Lawrence Canals	1
Welland Canal	2
Lake Superior	2
Total	10

STRIKING LOCKS OR GATES.

St. Lawrence Canals	1
Welland Canal	1
Total	2

STRIKING BRIDGES, DOCKS, PIERS, AND HARBOR AND CHANNEL BANKS.

Bridges	1
Docks	4
Total	5

ACCIDENTS TO MACHINERY OR OTHER GEAR THROUGH STRESS OF WEATHER OR OTHERWISE.

All in open water	3

FIRE.

Fire	1
Total	33

The report was unanimously adopted.

The chairman suggested the desirability of having the Dominion Marine Association undertake the Canadian Lake Protective Association's work. After discussion, it was agreed that the Canadian Lake Protective Association, being now a recognized body, and having membership comprising only a section of the Dominion Marine Association, should be continued as a separate organization, but it was sugegsted that it might have the same executive committee as the Dominion Marine Association, without any change in the constitution, so it was decided that the Canadian Lake Protective Association's committee for 1917 consist of the Dominion Marine Association's executive committee, whose names are given in the report of the latter association's annual meeting on this page.

The German "Blockade" of Europe.—In connection with what the German authorities have declared to be a submarine blockade of Great Britain and the allied countries, which is merely an unrestricted submarine and mine campaign against all vessels, whether belonging to neutral countries or not, they have announced that they will allow the United States to run one steamship a week to Great Britain under certain guarantees. They also stipulate that such vessels must be painted with white and red vertical stripes about 10 ft. wide, and must carry a large flag of red and white checked material on each mast, with the U. S. flag at the stern. A daily paper points out that the C.P.R. house flag, which is flown from all C.P.R. vessels, is checkered red and white, so that in reality the Germans have ordered the use of the C.P.R. flag on such vessels as they will permit to sail. It may be added that the Canadian Pacific Ocean Services, Ltd., house flag, while checkered red and white, has in the centre the letters C.P.O.S.

Dominion Marine Association's Annual Meeting.

The annual meeting was held at Toronto, Feb. 15, the chairman, W. E. Burke, Assistant Manager, Canada Steamship Lines, Ltd., presiding. The executive committee presented a comprehensive report over the signature of the President, and of the Counsel, Francis King. It showed that the steam tonnage enrolled in the association in 1916 was 166,997 net registered tons, against 210,000 in 1915. The barge or sailing tonnage was 29,469 net registered tons, against 32,075 in 1915, a total of 196,466 tons, against 242,075 the previous year. This decrease follows conditions due to the war which have continued to attract tonnage into ocean trade. Members of the association have continued the enrolment of the ships they own, irrespective of their location, but a great number of sales have been made and many losses at sea have occurred and therefore a fair comparison with the tonnage of previous years is not possible. The association has at least temporarily lost the tonnage of one member company, the manager of which resigned his seat on the executive committee during the election of officers at the annual meeting in 1916.

The report dealt in full detail with the past year's work, including the following subjects: Legislation, coasting voyage defined, pilots in Quebec district, masters and engineers for boats with internal combustion engines. The Business Profits War Act, 1916. United States Seamen's Act, Mr. 4, 1915. U. S. Rivers and Harbors Bill. International Joint Commission. Board of Grain Commissioners for Canada. Rules of the road. St. Lawrence River pilots and ship's articles, Kingston to Montreal. Montreal pilotage bylaws. Restrictions upon trading to foreign ports. Chicago drainage canal, withdrawal of water from Lake Michigan. Pollution of international waters. Shipping offices, registers for seamen. Deckloads, loadlines and bulkheads. Power development. Unlicensed small craft. Grain cargoes, Canadian regulations regarding outturns; Buffalo Grain Clearance Corporation; trimming arrangements; extended powers of Grain Commission under order in council of Mar. 22, 1916, and enquiries resulting; overtime work and minimum loading speed of elevators. Canals: safety devices on gates, guards at lock entrances. Navigation of the Kaministikwia River. Harbor and channel improvements. Aids to navigation. Canadian Railway and Marine World. General business, membership and tonnage. The report was unanimously adopted.

Special consideration was given to the Grain Commission's enquiry as to the regulations governing the adjustment of discrepancies in outturns of grain cargoes, and the meeting confirmed the executive committee's action in approving of force during 1916.

Report was made of the Lake Carriers' Association's action in appointing a committee to confer regarding the Buffalo Clearance Corporation, and the President and Vice President for 1917, with the association's Counsel, were appointed a committee for the same purpose, with power to agree, on behalf of the association, upon any proposed plans.

The following were appointed as a committee on aids to navigation: A. A. Wright, A. E. Mathews, W. J. Bassett, Toronto; W. J. McCormack, Sault Ste. Marie; J. F. Sowards and H. N. McMaster, Kingston, and they were empowered to elect a chairman.

The four vacancies on the executive committee, occurring by the expiration of the terms of office of H. W. Cowan, Montreal; C. B. Harris and A. A. Wright, Toronto, and W. J. McCormack, Sault Ste. Marie, were filled by the re-election of Messrs. Harris, Wright and McCormack and by the election of J. T. Mathews, Toronto, to succeed Mr. Cowan, who declined re-election. John Waller, Montreal, was also elected a member of the executive, to succeed Jas. Playfair, Midland, Ont., who had withdrawn from the association's membership. The executive committee for 1917 is now constituted as follows: A. A. Wright, Toronto, President; J. T. Mathews, Toronto, First Vice President; A. E. Mathews, Toronto, Second Vice President; W. E. Burke, G. E. Fair, C. B. Harris, W. L. Reed, J. F. Stewart, Toronto; L. Henderson, John Waller, Montreal; D. Murphy, Ottawa; W. J. McCormack, Sault Ste. Marie.

Government Vessel Building in Canada.—In response to questions in the House of Commons, Feb. 7, the following information was given respecting vessel building by the Dominion Government since Sept. 1, 1911: Five tugs, or tenders, were built by the Government for the Public Works Department's service and five were built for the same department by private builders. Three others were built but not registered, and one is under construction. Two motor launches were built for the Naval Service Department, but not registered, and five tugs or tenders were built for the Railways and Canals Department, one by the Government and four by private builders. Nine steamships and dredges were built by private firms for the Marine Department, and one dredge is under construction. The Government has also built 35 miscellaneous vessels for various departmental services.

The Storstad-Empress of Ireland Collision.—In connection with the distribution amongst various claimants of the amount realized by the sale of the s.s. Storstad, after sinking the C.P.R. s.s. Empress of Ireland, in the St. Lawrence River, off Father Point, May 29, 1914, a question has arisen in an appeal by the C.P.R., as to whether the vessel sank within Canadian coastal waters or on the high seas. If it is decided that the disaster occurred within coastal waters, the distribution to claimants will be governed by the Canada Shipping Act, and if decided otherwise, the Merchant Shipping Act (British) will apply. In either case, the C.P.R., claiming $2,500,000, will get nothing, the amount realized by the sale of the Storstad being $175,000, which will not even meet the prior claims and expenses.

Steamship Depreciation Schedule.—The Dominion Marine Association has adopted the following schedule of rates of depreciation for use in returns under the Business Profits War Tax Act, 1916, the percentages named being per year on the original cost of the new vessel, including only structural additions: Steel built steam lake freighters, 3%; steel built barges, 5%; composite steamers and barges, 5%; wooden steam freighters, 7½%; wooden barges, including schooners, 10%; passenger boats (wooden or steel), 7½%; steel tugs, 5%; wooden tugs, 7½%.

Mail Subsidies and Steamship Subventions for 1917-1918.

The estimates for the fiscal year 1917-18, submitted to the House of Commons recently, contain the following items for steamship service:

ATLANTIC OCEAN.

Between Annapolis and London or Hull, Eng., or both	$ 5,000.00
Canadian Atlantic ports and Australia and New Zealand	140,000.00
Ocean and mail service, Canada and Great Britain	1,000,000.00
Canada and Cuba	25,000.00
Canada and Newfoundland	70,000.00
Canada and West Indies or South America or both	340,666.66
Canada and South Africa	146,000.00
Halifax, St. John's, Nfld., and Liverpool, Eng.	20,000.00
Montreal, Quebec and Manchester, Eng., during summer, and St. John, Halifax and Manchester during winter	35,000.00
Winter service between St. John, N.B., Dublin and Belfast, Ireland	7,500.00
Winter service between St. John, N.B., and Glasgow, Scotland	15,000.00
Winter service between St. John, N.B., Halifax and London, Eng.	15,000.00
St. John, Halifax and London, Eng.	25,000.00

PACIFIC OCEAN.

Between Canada and Australia or New Zealand or both	180,509.00
Canada, China and Japan	253,333.34
Prince Rupert and Queen Charlotte Islands, B.C.	16,000.00
Victoria and San Francisco	3,000.00
Victoria, Vancouver way ports and Skagway	12,500.00
Victoria and west coast Vancouver Island	5,000.00
Vancouver and northern ports of British Columbia	16,800.00

LOCAL SERVICES.

Between Baddeck and Iona, N.S.	5,825.00
Charlottetown, Victoria and Holliday's Wharf, N.B.	2,500.00
Froude's Point and Lockeport, N.S.	600.00
From opening to closing of navigation in 1917, between Gaspe Basin and Dalhousie or Campbellton, N.S.	15,000.00
Grand Manan and mainland	10,000.00
Halifax, Canso and Guysboro, N.S.	5,000.00
Halifax and Newfoundland via Cape Breton ports	10,000.00
Halifax, Mahone Bay, Tancook Island and La Have River ports	4,000.00
Halifax and Spry Bay and ports in Cape Breton	4,000.00
Halifax, South Cape Breton and Bras d'Or Lake ports	6,000.00
Halifax and West Coast Cape Breton, calling at way ports	4,000.00
Halifax and Sherbrooke	2,000.00
From opening to closing of navigation between Kenora and Fort Frances, Ont.	8,000.00
From opening to closing of navigation, between mainland and Magdalen Islands	18,000.00
Mulgrave and Canso, N.S.	6,500.00
Mulgrave and Guysboro, N.S., calling at intermediate ports	5,500.00
Newcastle, Neguac and Escuminac, calling at all intermediate points on Miramichi River and Miramichi Bay	2,500.00
Pelee Island and mainlain, Ont.	8,000.00
Petit de Grat and Intercolonial Ry. terminus at Mulgrave, N.S.	7,000.00
Petitcodiac River between Moncton and way ports, and west coast of Cumberland County, N.B.	2,500.00
Pictou and Montague, calling at Murray Harbor and Georgetown, P. E. I.	6,000.00
Pictou, New Glasgow, Antigonish County ports and Mulgrave, N.S.	1,000.00
From opening to closing of navigation in 1917, between Pictou, Mulgrave and Cheticamp, N.S.	7,500.00
From opening to closing of navigation in 1917 (between Port Mulgrave, St. Peter's, Irish Cove and Marble Mountain and other ports on the Bras d'Or Lakes, N.S.)	6,500.00
Prince Edward Island, Cape Breton and Newfoundland	20,000.00
During 1917, between Quebec and Harrington, calling at ports and places along northern shore of River St. Lawrence between such terminals	28,000.00
Quebec and Gaspe Basin, touching at intermediate ports	8,500.00
Quebec and ports on north shore of Isle of Orleans	4,500.00
Riviere du Loup, Tadoussac and other North Shore ports	6,000.00
Winter service between Riviere du Loup, Tadoussac and other St. Lawrence ports	8,000.00
Winter service between St. Catherines Bay and Tadoussac, Que.	3,500.00
St. John and ports in Cumberland Basin, N.B.	3,000.00
St. John and St. Andrew, N.B., calling at intermediate points	4,000.00
St. John and Bridgetown, N.S.	2,500.00
St. John and Digby, N.S.	20,000.00
St. John, Digby, Annapolis and Granville, viz., along the west coast of Annapolis Basin, N.S.	2,000.00
St. John, N.B., and ports on Bay of Fundy and Minas Basin, and Margaretville, N.S.	8,000.00
St. John, Westport and Yarmouth and other way ports	10,000.00
During 1917, between St. Stephen, N.B., Ste. Croix River points, Deer Island, Campobello and the inner islands, Passamaquoddy Bay and L'Etete or Back Bay	6,000.00
During 1917, between Sydney and Bay St. Lawrence, calling at way ports	6,000.00
During 1917, between Sydney and Whycocomagh	3,000.00
Sydney, N.S., around east coast of Cape Breton to Hastings and return to Sydney via Bras d'Or Lakes	5,500.00
Expenses in connection with supervision of subsidized steamship services	3,000.00
	$2,630,734.00

AUTHORIZED BY STATUTE.

Canada, China and Japan	$ 121,666.66
Canada and France	200,000.00
	$ 321,666.66

St. John Harbor Improvement Contract Litigation.

A petition was filed in the Superior Court at Montreal, Feb. 2, for an interlocutory injunction to prevent the proposed transfer of certain property, valued at about $1,000,000, from the Norton Griffiths Construction Co., to W. H. Brown, New York. The petitioner, J. H. Craven, Larchmont, N.Y., claims that if the transfer is made, his interest in the property and belongings will be prejudiced and he will suffer loss.

The Norton Griffiths Construction Co. was given a contract by the Dominion Government on Mar. 25, 1912, for the construction of harbor works and improvements at Courtenay Bay, St. John, N.B., and it is claimed that, on July 20, 1912, an agreement was entered into by the company, the petitioner and J. A. Bulyea, St. John, N.B., providing that the company should receive 51% of the total net profits on the contract, over and above 15% of the total prime cost of the construction works, and that the petitioner and J. A. Bulyea were entitled to 24½% each. The company, it is claimed, undertook to render an audited accounting of the works and all expenditures every three months as the contract proceeded and to make a final report showing the net profits to be distributed when the contract was completed. The work was continued up to Dec. 22, 1916, when the contract was abandoned. During the progress of the work considerable assets were accumulated in machinery, dredges and other materials, lands were acquired on Courtenay Bay, and it is alleged that the company is negotiating with the Dominion Government and W. H. Brown, acting for himself and other parties, for the sale and transfer of these properties.

Masters' and Mates' Examinations.—The following certificates have been granted: W. C. Jordon, Collingwood, Ont., master, passenger steamship, coasting; J. Preston, Midland, Ont., master, inland waters; Jas. Gunn, Owen Sound, Ont., mate, passenger steamship, inland waters; J. A. Lethbridge, Owen Sound, Ont., mate, passenger steamship, inland waters.

The s.s. Fernfield's Stranding Recalled.

The Liverpool Journal of Commerce, in commenting recently on the stranding of the British s.s. Fernfield on Battery Point shoal, Louisburg, N.S., says: "At the subsequent enquiry held before Capt. Demers, the Canadian Wreck Commissioner, it was proved, through the able defence of solicitors who acted in the service of the Mercantile Marine Service Association, that the log books had been properly kept and supervised, and as a result of their able defence, the certificate of the master was not dealt with, and he himself was exonerated from all blame, a happy result, which has given much gratification to the council of the Mercantile Marine Association, who are constantly pointing out the dangers and difficulties attendant on navigation in these waters."

The court's judgment in this enquiry was summarized in Canadian Railway and Marine World, at the time, as follows: "From the evidence adduced the court found that from the time the vessel left St. John, N.B., on July 1, until it reached Louisburg light, the master exercised all the necessary and proper precautions in navigating, but in that neighborhood, under the weather conditions existing, he omitted to include in his calculations the possible influence of wind on his starboard, in heading for the light on the wharf, and also that in turning around close to the buoy, a mistake was made. It therefore found that he erred in judgment, but not in a culpable manner, and therefore did not deal with his certificate, nor reprimand him, but cautioned him to be more careful in the future, in entering harbors with which he is not well acquainted. The logs were examined and found properly kept and supervised."

The Liverpool paper's criticism might have passed without comment from this side, regardless of its inaccuracy, but for the matter contained in the last few lines. This would convey that the "dangers and difficulties" were more responsible for the casualty than the error of judgment on the part of the master, and would be liable to give other masters the impression that they may continue the careless and slipshod methods of navigation, which the Wreck Commissioner's courts, for several years past, have been condemning. The master was not exonerated from all blame in the casualty under notice. It was found that he erred in judgment, but not in a culpable manner and was cautioned to be more careful in future.

Lights on Bridges Over Navigable Waters.—An order in council has been passed providing that no plan and description of a fixed bridge over navigable waters (not a canal) submitted to the Public Works Department for approval shall be approved unless they indicate a fixed white light on each side of every channel to be navigated through the fixed bridge, such lights, of an intensity to be approved by the Marine Department, to be maintained by the owner of the bridge during every night from sundown to sunrise during the entire navigation season.

Sufficiently Obvious.—A Petrograd press dispatch states: "In an explosion on an icebreaker .... persons have been killed and .... injured." Local press comment states that the number of casualties has evidently been struck out by the censor.

Marine Votes for 1917-1918.

The estimates for the fiscal year 1917-18, submitted to the House of Commons, include the following items for works connected with navigation:

CHARGEABLE TO CAPITAL ACCOUNT.

		Revotes.
Welland Ship Canal	$ 200,000	$ 200,000
Trent Canal	600,000	350,000
	$ 800,000	$ 550,000
Harbors and Rivers—		
St. John harbor improvements	$1,000,000	
Lauzon dry dock	1,000,000	$ 250,000
River St. Charles improvements	700,000	200,000
Toronto harbor improvements	1,000,000	
Port Arthur and Fort William harbor	750,000	500,000
Victoria harbor improvements	1,000,000	
	$5,450,000	$ 950,000

CHARGEABLE TO INCOME ACCOUNT.

Canals—		
Chambly	$ 1,700	
St. Annes lock	1,500	
St. Peters	45,000	$ 45,000
Soulanges	1,000	
Trent	25,000	
Welland	30,000	
	$ 104,200	$ 45,000
Canal surveys and inspections	25,000	$ 5,000
Harbors and Rivers—		
Nova Scotia	285,300	181,900
Prince Edward Island	26,900	
New Brunswick	150,950	8,600
Maritime Provinces generally	5,000	
Quebec	438,020	145,100
Ontario	333,850	161,700
Manitoba	19,000	800
Saskatchewan and Alberta.	20,000	
British Columbia	136,850	5,400
General	40,000	
Dredging	1,705,000	67,000
	$3,120,870	$ 570,500

Authorized by statute—	
Collingwood dry dock No. 1	$ 15,000.00
Collingwood dry dock No. 2	9,208.96
Montreal floating dock	105,000.00
	$129,208.96
Naval service	$2,270,400.00
Ocean and river service	1,444,800.00
Marine Department	888,550.00
Lighthouse and coast service	2,201,900.00
Scientific institutions	39,[illegible].00
Marine hospitals	78,000.00
Steamboat inspection	79,749.00

Harbor Improvement Scheme at Vancouver.

Canadian Railway and Marine World for Sept., 1916, contained an outline of the harbor improvement scheme for Vancouver, as suggested by the Harbor Commissioners. This scheme involved the purchase of the Kitsilano Indian reserve, 80 acres, for $700,000; property at Port Moody, 88 acres, $500,000; the Heaps property on Burrard Inlet, 16¾ acres, $650,000; right of way for a harbor terminal railway from the Kitsilano Indian reserve to the Heaps property, $1,552,861; a portion of the Pacific Great Eastern Ry. right of way, $516,627, and wharf property and warehouses owned by the Great Northern Ry., and the waterfront property immediately east of the G.N.R. property, $1,800,000. The approximate total cost of the properties to be acquired is $5,769,128. This scheme has met with considerable opposition, especially from the Vancouver City Council. A report on the whole situation has been prepared by F. L. Fellowes, City Engineer, and is now before the civic railways and bridges committee. It is a general outline of the work of improvement carried out in the past, what is now under way, and also deals with the Harbor Commissioners' proposals.

Included in the report is also the outline of a new plant for an additional reclaimed area in False Creek, near the bridge at Main St., increasing the waterfrontage by 31 acres for industrial sites, which, it is claimed, would be carried out at a cost of $10,000 an acre, and open up a main artery through False Creek, and allow the use of present bascule bridge on Main St. to span the new waterway. The Harbor Commisisoners' scheme for a harbor terminal railway is endorsed. This line it is proposed to operate by electricity, and to make connections, with switching facilities, with all the railways entering Vancouver. In connection with this railway, it is planned to do away with all level crossings on Main St., obviate the necessity of participating in the cost of erection of overhead viaducts at Union, Harris, Keefer and Pender Sts.; remove the British Columbia Electric Ry. tracks from Hastings St.; route all B.C.E.R. interurban traffic over the Commissioners' tracks; eliminate the C.P.R. tracks across Pender, Hastings and Cordova Sts. to the main line at Columbia Ave.; abandon the proposed tunnel scheme; remove the C.P.R., B.C.E.R. and Great Northern Ry. from Front St., and by arrangement with the G.N.R., to secure the removal of the G.N.R. tracks over Main St. and substitute the right to operate over the Commissioners' tracks to the G.N.R. terminal at Pender St., the two systems connecting at the head of False Creek. The estimated cost of this proposal is $418,700, exclusive of bridges and rails, and $756,260 inclusive of bridges and rails. The report also estimates that the whole acreage, 31.74 acres, should yield in normal times an average of $20,000 an acre, or a total of $664,400.

It is shown, in a comparison of the charges at Vancouver, with those of ports in other parts of the world, that Vancouver is the lowest.

Caandian Icebreaker in Russia.—The ice breaking steamship which was built by Canadian Vickers, Ltd., Montreal, last year, for the Dominion Government, and which was, immediately on completion, sold to the Russian Government, has arrived at her destination, and is being used in the White Sea. She crossed the ocean in charge of Capt. Reid, who had previously taken over the Dominion Government icebreaker Minto for the same service. Reports state that the voyage was accomplished in safety, and that the Russian Government officials are delighted with the vessel, which is said to be the most powerful icebreaker in the world. She was originally named J. D. Hazen and has been renamed Mikula. It is reported that Capt. Reid has been appointed to the chief command of all the Russian icebreakers operating in the White Sea.

Vessels Turning in the River at Fort William.—An order in council has been passed amending sec. 15 of the special regulations for the government of the harbor at Fort William, Ont., by providing that steam vessels exceeding 260 ft. long may be turned with a tug in that section of the Kaministikwia River lying between the bend above C.P.R. elevator D and the westerly limit of the Grand Trunk Pacific Ry. rail dock, and that steam vessels of such tonnage and length may be turned also in that section of the river between C.P.R. slip 1 and elevator C, but the turning of such vessels in the latter portion of the river shall not take place without the use of a tug, unless sanctioned by the harbormaster.

Quebec Harbor Improvements.

The Quebec Harbor Advances Act, 1917, which has been passed by Parliament, provides that the Government may advance from time to time, to the Quebec Harbor Commissioners, $1,500,000, to carry on the construction of such terminal facilities as are necessary properly to equip the port. During the construction, the interest payable on the debentures deposited with the Finance Minister, in respect of these terminal facilities, are to be deemed as money required to enable the commission to complete the work, and payable out of the present advance. The time limit for the construction outlined is to be fixed by the Governor in council. Detailed plans and specifications of the work to be done and on which the advances are to be made, must be satisfactory to the Minister of Marine, and approved by the Governor in council. Advances will be made monthly on application, which must be accompanied by statements showing the total expenditure for the month the advance is intended to cover, and the commission is to deposit with the Finance Minister debentures equal in par value to the advance made. The debentures are to be repayable in 25 years and to bear interest at 3½% a year, payable half yearly.

The Minister of Marine stated in the House of Commons, Feb. 4, that the $1,500,000 provided in the estimates for 1917-18 as an advance to the Quebec Harbor Commission, was necessary to enable it to complete the work started in 1913, and for which the Government had already advanced $500,000. Since the harbor development scheme was undertaken, the revenue of the port has advanced from $126,000 in 1913 to $288,000 in 1916. Of this amount to be advanced, it is expected that $700,000 will be spent during the current year, and the balance within about two years. The addition to the grain elevator and the completion of the conveyor system for the elevators will cost about $800,000.

Dominion Government Vessel Replacement and Upkeep.

In the estimates submitted to the House of Commons for the fiscal year, 1917-18, provision is made regarding vessels, as follows:

Lighthouse and Coast Service.—For rebuilding s.s. Scout, $12,000; new vessel to replace s.s. Maisonneuve, $12,000 (additional to $25,000 voted for current year); pilotage and maintenance and repairs to s.s. Eureka, $56,300.

St. Lawrence Ship Channel.—To provide for construction and completion of dredging plant for St. Lawrence River from Montreal to Father Point, $216,550 (additional to $452,715 voted for current year).

Ocean and River Service.—To provide for the construction of two steamships to replace s.s. Quadra, $150,000; maintenance and repairs to steamships and icebreakers, $1,180,000.

Tidal Service.—Maintenance of tidal stations and surveying steamships, $35,000.

Fisheries Protection.—To provide new vessels, $100,000; repairs and maintenance of fisheries protection steamships, $375,000; maintenance and upkeep of ships, Naval College, etc., $1,000,000.

Customs Department.—To provide for maintenance and upkeep of revenue cruisers and preventive service, $100,000.

Licensing Canadian Vessels for Ocean Service.

The daily press throughout the Dominion, during February, published the following "information": "The situation caused by the German submarine blockade is being given consideration, as far as sailings of vessels of Canadian register are concerned, by a ship's licensing committee appointed by the government to control Canadian steamship transportation. The committee is composed of A. Johnston, Deputy Minister of Marine; F. C. T. O'Hara, Deputy Minister of Trade and Commerce; J. McDougald, Commissioner of Customs, and G. J. Desbarats, Deputy Minister of Naval Service."

It might be inferred from this that recent events had caused the Government to put into force some new regulations regarding Canadian vessels in ocean service, but this is not the case. The order in council, framing the regulations and authorizing the appointment of a committee to issue the necessary licenses, is dated Mar. 11, 1916, and it was published in Canadian Railway and Marine World for May, 1916. No other orders in council in connection with this matter, and no further regulations, have been passed since that date.

At the time the regulations became effective, Apr. 1, the Licensing Committee issued a circular to steamship owners and charterers, pointing out that the sole object to be attained was the conservation of Canadian registered vessels for British and allied needs. There is no desire to interfere with established service, unless it is absolutely essential, nor is there any intention to interfere, all things being equal, with charters which were in existence prior to Mar. 11, 1916. The committee favors voyages to and from Canadian and other British and allied ports, and everything possible is being done to facilitate the issuing of licenses. Licenses are also issued for inter-neutral voyages, only when it is conclusively shown that the cargo is being carried to, or is ultimately destined for British or allied ports. The committee's desire is to facilitate shipping, to avoid unnecessary ballast voyages, and as far as possible to regulate voyages to congested ports.

Increase in Vessel Prices.—From a list of vessels sold during the last quarter of 1916, prepared by Lloyd's, it is seen that there have been some extraordinary increases in prices paid for vessels, as compared with normal times. The s.s. Kaifuku Maru, built in 1892, was sold in 1907 for $43,798, and was resold recently for $729,975. The s.s. Hercules, built in 1903 at a cost of $210,000, and sold in 1904 for $161,250, has been resold for $1,300,000. The s.s. Gozan Maru, built in 1898, and sold in 1913 for $122,500, has ben resold for $875,000. An old vessel, the s.s. Miaoulis, built in 1893, sold in 1905 for $75,000, in 1907 for $77,500, was resold in 1916 for $592,500.

Shipbuilding in Great Britain.—It is reported that the Controller of Shipping in Great Britain has decided on a type of freight steamship to be built in yards there during the war. This will, it is stated, be single deck, about 9,000 tons dead weight, about 400 ft. long, and all vessels will be built on the same design and to the same specifications. It is also stated that contracts have been awarded for 36 such vessels, and that other orders will be placed as soon as arrangements can be made.

The Whereabouts of Canadian Lake Steamships.

The following list made up at the close of navigation, 1916, shows the enrolled vessels owned by the Canadian Lake Protective Association members, and the waters on which the vessels were then engaged:

Trading on the Great Lakes: J. Frater Taylor, W. C. Franz, Agawa, Thos. J. Drummond, Emperor, Midland Prince, Midland, King, Martian, Sarnian, Haddington, Hamiltonian, Doric, Ionic, Bickerdike, City of Hamilton, City of Ottawa, Calgarian, A. E. Ames, Beaverton, Mapleton, J. H. Plummer, H. M. Pellatt, Saskatoon, Paipoonge, Geo. A. Graham, Atikokan, Thunder Bay, Collingwood, Edmonton, Yorkton, Masaba, Ungava, J. H. G. Hagarty, E. B. Osler, W. D. Matthews, Iroquois, Mariska, Keywest, Keyport, Keybell, Keynor, Arabian.

Trading to Gulf or Lower St. Lawrence or coasting on the Atlantic but still entering Canadian waters: Easton, Steelton, *Glenmount, *Kinmount.

At sea: A. E. McKinstry, Acadian, C. A. Jaques, Canadian, Dundee, Fordonian, Glenellah, D. A. Gordon, Kenora, Neepawah, Renvoyle, Rosedale, Strathcona, Tagona, Wahcondah, Winona, *Rosemount, Port Colborne, W. H. Dwyer, Keyvive.

*Those marked with an asterisk have been sold since the close of navigation. It is understood that at least one other sale has taken place, but no return has been filed.

Riviere du Loup-Tadoussac Ferry.—The Minister of Trade and Commerce stated in the House of Commons recently that this ferry service was discontinued April 30, 1916. Tenders were called for, but only two were received. The subsidy asked for in one was to high, and the other tenderer was unable to put a boat on the route for the winter of 1916-17. The House of Comomns subsequently adopted a motion by C. A. Gauvreau, M.P. for Temiscouata, for a copy of all correspondance, notes, memoranda, and other documents, addressed to the Ministers of Marine and of Trade and Commerce, or to their departments, concerning the ferry between Riviere du Loup, Tadoussac, St. Simeon, St. Catherine and Escoumains, from Jan., 1912, to Dec., 1916, and respecting the contracts with the Trans-St. Laurent Co., the Quebec & Levis Ferry Co., and also regarding the steamboats Mahone, Pilot and Queen.

Canada Steamship Lines' Finances. — At a meeting of directors at Montreal, Feb. 1, a dividend of 7% on the $12,500,000 preference stock was declared, payable Mar. 1 to shareholders of record Feb. 15. This payment reduces the accumulated dividend arrears to 5¼%, which, it is expected, will be cleared off durin gthis year. The net earnings from operation for 1917 are estimated at $4,000,000, against $1,732,057 for 1915. The balance, after interest, depreciation, etc., estimated, has been deducted, shows $2,500,000, or 20% on the preference stock. The annual meeting of shareholders has been called for Mar. 7.

B. C. Shipyards, Ltd., has been incorporated under the British Columbia Companies Act, with $100,000 authorized capital, and office at Vancouver, to build, own and operate dry docks, marine railways, steam, sailing and other powered vessels of all descriptions, and to carry on a general shipbuilding and navigation business.

Marine Engineers and Their Pay.

The following is taken from the Quebec Chronicle of Feb. 1:—

"Marine Engineers Want More Pay.

"In view of the increase cost of living it has been decided by the National Association of Marine Engineers of Canada to apply for an increase of 25 p.c. on the salary paid in 1916. For this purpose a circular letter has been sent to all the companies asking them to grant the Engineer's request. This is the first application of the kind made by the Association. Many companies have already given an answer to the Association concerning the matter, and it is expected that the mainder will send a favorable reply soon.

"It will be to the general public interest if this question is settled before the opening of navigation. It would be unfortunate if naviga ion is paralyzed at a period when there is the greatest need of all our resources. The movement is a most serious one and it is hoped that all interested parties will give a favorable answer and so avoid terrible results.—Advt."

It is plain from this that marine engineers desire an increase in their wages, and it also seems plain that the National Association of Marine Engineers of Canada is going to see that they get it, or, according to the notice, there will be terrible results. It will be noticed that the item quoted above bears the contraction "Advt." at the end. This means that it is an advertisement, and is paid for as such. It is usual for advertisements to be placed by some interested parties, in this case, presumably the association mentioned.

Is this method to be adopted as a general thing in future whenever the question of readjustment of wages comes up for settlement? The wording of the whole thing is unfortunate, and it is an open question whether the threats, so thinly veiled, do not.. bring it within the law.

The circular referred to in the notice, with the rates of pay desired for the forthcoming season, was reproduced in Canadian Railway and Marine World for Feb., pg. 79.

The William Nottingham-W. Grant Morden Collission.—The U. S. local inspectors held an enquiry recently into the cause of the collision between the Great Lakes Steamship Co.'s s.s. William Nottingham and Canada Steamship Lines' s.s W. Grant Morden on Lake Superior, July 27, 1916. They found that the second officer of the William Nottingham, C. F. Bowen, was guilty of negligence, and violated rule 26 of the Pilot Rules for the Great Lakes, and state that while they are convinced that the licensed officer in charge of the W. Grant Morden was seriously at fault, and was to some extent responsible for the collision, as he was navigating at an immoderate speed and failed to comply with the same rule, that does not free the Nottingham's second officer from penalty. They therefore suspended his license as a first class pilot of steam vessels for five months from Dec. 5, 1916.

Steamship Examinations at Halifax.—It is announced that arrangements are being made for the continuation of the examination of neutral steamships, bound for trans-Atlantic ports, at Halifax, N.S., instead of Kirkwall, Scotland, or Falmouth, England, as hitherto. The first steamship to be so examined was the Danish s.s. Frederick VIII, which is conveying the German Ambassador to the United States, and his staff, back to Germany, under safe conduct guarantees by the British. For the present, it is stated that these examinations will only apply to eastbound traffic, but that it is expected that they will be extended to westbound traffic shortly.

Atlantic and Pacific Ocean Marine.

The Ulster Steamship Co.'s s.s. Innishowen Head is reported as sunk by the enemy, while bound from Belfast, Ireland, to St. John, N.B. She had been on the Canadian route for a number of years and was built at Belfast in 1886.

Lord Furness, who is visiting the American continent, is reported to have stated that Furness, Withy & Co. had lost 31 steamships during the war, but that it was building two vessels to replace each one lost, so that at the end of the war its facilities would be more than doubled.

Shipping companies have announced a general increase in Atlantic passenger rates, both eastbound and westbound. First class rates have been increased by $10, second class $5, and third class $2.50. Passenger rates on U. S. lines have also been increased $15, $5 and $3.75 for each class respectively.

The creation of an Atlantic ocean port at Galway, Ireland, to deal with North American trade, was the subject of a resolution at a recent meeting of the Dublin City Council. This matter has been before the public for several years, in connection with a proposed all red route round the world.

Reports from Japan state that the British Government has purchased 17 steamships under construction at Kobe, Japan, for service between China and Japan and Puget Sound ports. The price mentioned is $33,000,000. Of these vessels, one is stated to be 12,000 tons, two others 10,300 tons each, and the balance 9,000 tons each.

A body washed ashore near Ilfracombe, Devonshire, Eng., has been identified, by papers carried in the clothing as E. S. Gage, third officer of the s.s. Rappahannock, owned by Furness, Withy & Co., which sailed from Halifax in Oct., 1916, for London, Eng., and is presumed to have been torpedoed by the enemy, without warning.

The C.P.R. s.s. Empress of Asia was cleared recently from the dry dock at Hong Kong, China, where she has had her annual overhauling and painting. She was to be followed in the dock by the s.s. Empress of Russia, and then by the s.s. Empress of Japan. Each of the vessels spends about 28 days in the annual overhaul.

The British Admiralty Court awarded the owners of the Danish s.s. Norma $11,250 recently for salvage services to the s.s. Rosedale, owned by the Canada Steamship Lines, Ltd. The claim was contested, as it was claimed that the Rosedale broke away while being towed, but the Elder Brethren of Trinity House decided that the Norma rendered important service.

The White Star s.s. Laurentic was reported sunk by an enemy torpedo or by striking a mine towards the end of January, near the coast of Ireland. She was built at Belfast, Ireland, in 1908, and with her sister vessel, Megantic, was placed on the Canadian service. On the outbreak of war, she was requisitioned by the British Government, and was used as a transport, taking some of the first contingent of the Canadian Expeditionary Force to England. She was later engaged in war service in the Far East, and returned recently to British waters.

It is reported that J. S. Dennis, M.Can.Soc.C.E., Assistant to President, C.P.R., has announced that the C.P.R., as agent for the Russian Government, is arranging for a steamship service between Russia and Canada after the war, the Canadian port to be St. John, N.B. Prior to the war, the Russian Volunteer Fleet was operating a line of steamships between Siberian ports and Vancouver, the C.P.R. acting as agent. If this is continued after the war, a round the world service between Canada and Russia on the Atlantic, and between Russia and Canada on the Pacific, would be operated.

The former Great Northern Pacific Steamship Co.'s s.s. Minnesota is reported sold to the International Mercantile Marine Co., for $2,750,000. While on her way to Great Britain, from Seattle, Wash., about a year ago, her boilers were disabled, while off the Mexican coast, and she was towed back to San Francisco, where repairs costing about $160,000 were made, and where she has been berthed ever since. She was built at New London, Conn., in 1904, and is 20,718 tons gross, 13,324 tons register, with dead weight capacity of 17,000 tons. Her dimensions are: length 622 ft., breadth 73.5 ft., depth 41.5 ft.

Maritime Provinces and Newfoundland.

The s.s. Sagona, operating between North Sydney, N.S., and Port aux Basques, Nfld., ran ashore during bad weather, near Louisburg, N.S., Feb. 21.

The harbor revenue for St. John, N.B., for January was $20,776.99, compared with $15,909.59 for Jan. 1916. The sailings in January numbered 48 against 33 for Jan. 1916.

The Home Steamship Co., Ltd., Halifax, N.S., has, at its own request, had its certificate of registration revoked. It was incorporated under the Nova Scotia Companies Act, Oct. 1, 1912, and operated the s.s. Eskasoni.

The winter service between Pictou, N.S., and Georgetown, P.E.I., is being performed tri-weekly by the car ferry steamship Prince Edward Island, leaving Pictou Tuesday Thursday and Saturday at 7 a.m., and returning from Georgetown Monday, Wednesday and Friday at the same hour. Commencing Jan. 30, an ice-boat mail service was operated between Cape Tormentine, N.B., and Point Borden, P.E.I., leaving the former place Monday, Wednesday and Friday at 3.40 p.m., and the latter place Tuesday, Thursday and Saturday at 4.10 p.m.

The Minister of Public Works announced, Feb. 9, that the contract with the Norton Griffiths Construction Co., for harbor improvements and other works at Courtenay Bay, St. John, N.B., had been cancelled, and that a new contract was being prepared, for which tenders would be invited immediately, and the work carried on as expeditiously as possible. He stated that every effort had been made to secure a completion of the contract by the original successful tenderers, but the necessities of the case would not permit of further delay.

The Newfoundland sealing fleet, which commences operations about the middle of March, will be the smallest on record. The vessels of the modern type which have been engaged in the service for the past few years, are now employed elsewhere, so for this season the sealers revert to the older, wooden type of vessel. Owners have announced that they will engage no unmarried men between 20 and 30, who have not offered their services to the naval or military authorities, or can establish that they remain at home to permit other members of their families to go to the front.

Province of Quebec Marine.

The name of the s.s. O. S. Paul, no. 126851, owned by the Tourville Lumber Mills Co., Montreal has been changed to Tourville.

The Dominion Government s.s. Montcalm sailed from Quebec recently, with supplies, etc., for north shore points, Seven Islands, and possibly Ellis Bay, Anticosti Island. Owing to the exceptionally heavy ice in the Gulf this year, it is not anticipated that Ellis Bay will be reached, even if the attempt be made.

The British Yukon Navigation Co., operating as the River Division of the White Pass and Yukon Route, is building gtwo vessels to replace the steamboats Gleaner and Scotia, which, owing to the increase of the tourist business into Atlin, are now unable to handle it. The vessel for the Taku Arm will be driven by a stern wheel propeller, and will be 165 ft. long, 35 ft. beam ,and will have capacity for berthing 70 passengers. She will sail from Caribou, on the Rail Division of the White Pass and Yukon Route, and run to Taku, where passengers and freight will be transported over the Portgage, a small tram line about two miles long, and thence taken by the Lake Atlin boat to points on Lake Atlin. The second vessel, for Lake Atlin, is designed for sightseeing, and will be 87 ft. long, 18 ft. beam, and will have no berthing accommodation. These vessels are being built at Victoria, and will be removed in sections by steamship to Caribou, whence they will be hauled over the ice to Atlin. Press reports state that the cost of them will be about $200,000, but we are officially advised that this is very much exaggerated. We are also advised that press reports that the company is building gtwo additional steamships to operate between White Horse and Atlin is very wide of the mark, as there is no water transportation between the points named.

Georgian Bay Canal Commission.—The Minister of Public Works stated in the House of Commons recently that the Georgian Bay Canal Commission is composed of W. Sanford Evans, F. S. Meighen and E. Gohier. Its cost to Dec. 31, 1916, was $46,164.06. It cannot conclude its labors until conditions are such that full public hearings can with propriety be held, and the public mind is free to give this important subject the necessary attention. The special preliminary investigation now being carried on will be continued only as long as in the Government's judgment the results justify the expenditure. It is expected that a second interim report will be submitted before the close of the present parliamentary session, containing further studies of the movement of agricultural products, while certain detailed investigations of traffic between Canada and Europe are already well advanced.

Notice has been issued that cables addressed to soldiers in France are being improperly sent to the War Office, London, Eng., thereby causing some annoyance and delay. All cables intended for soldiers of the Canadian Expeditionary Force, in France, should be addressed to France, and in addition to the regimental number, name, unit, etc., should bear the words, Canadian, France. There may, however, still be some little delay, as the cables, in the final stages of delivery, are not necessarily sent by wire. This does not apply to cables sent at the special non-minimum week end letter rate, such messages being sent from the War Office, London, Eng., by mail.

Ontario and the Great Lakes.

The Lake Erie Fishermen's Association, affiliated with the Canadian Fishermen's Association, has agreed to petition the Dominion Government to place two substantial patrol boats to guard the fisheries in Lake Erie, in place of the two small vessels now there.

A press report from Chatham, Feb. 12, states that Public Works Department engineers have commenced taking soundings in the River Thames from Chatham to the lighthouse, and that a report is being prepared in connection with the proposal to dredge a 14 ft. channel from Chatham to Lake St. Clair.

A press dispatch from Cleveland, Ohio, states that options have been taken by unknown Canadian interests on eight package freight steamships of U.S. register, and if the U.S. Shipping Board approves, sales will be closed at an early date. If the vessels are taken through the Welland Canal, they will have to be cut to pass the locks.

The Toronto, Hamilton & Buffalo Navigation Co. hopes to resume its ferry service between Port Maitland, Ont., and Ashtabula, Ohio, early in March. It was intended that the service would be suspended about the middle of February, but, owing to unprecedented accumulation of ice in Lake Erie, it was necessary to suspend it towards the end of January.

The U. S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for January, as follows: Superior, 602.78; Michigan and Huron, 580.48; Erie, 571.68; Ontario, 245.26. Compared with the average January levels for the past ten years, Superior was 0.82 ft. above; Michigan and Huron, 0.64 ft. below; Erie, 0.06 ft. below, and Ontario, 0.20 ft. below.

The Lake Simcoe Navigation Co., Ltd., at the end of January, assigned to J. F. Lawson, chartered accountant, Toronto. The company owned and operated two steamboats, named Modello and Otonabee, on Lake Simcoe, and had its head office at 84 King St. East, Toronto. It was incorporated in 1912, and had a paid up capital of $25.000. The officers and directors were: Herbert Waddington, President; R. J. Law, Secretary Treasurer; F. E. Dalton, W. S. Simpson and F. C. L. Jones, directors.

The Dominion Public Works Department's estimates for the fiscal year 1917-18, contain an item of $35,641.50, to pay the Western Dry Dock and Shipbiulding Co., Port Arthur, a portion of the fourth payment of subsidy due on the completion of works as per agreement, notwithstanding that the works are not completed. The agreement mentioned provides for payment out of the consolidated revenue fund of $37,741.50 a year for 20 years, being at the rate of 3% of the cost of the dry dock, which is given in the agreement as $1,258,050. The property has now passed to the Port Arthur Shipbuilding Co., Ltd.

The s.s. Keenora, owned by the Rat Portage Lumber Co., Kenora, Ont., and formerly owned by the Rainy River Navigation Co., Fort William, Ont., has been sold to Alex, Mackenzie, for a Winnipeg syndicate. It is stated that it is the owners' intention to operate the vessel in a passenger and freight service on the Red River and Lake Winnipeg, and that she will be dismantled and taken to Winnipeg, where she will be reassembled and placed in service on the reopening of navigation. She was built at Kenora, Ont., in 1897, and is screw driven by engine of 38 n.h.p. Her dimensions are: length 119.9 ft.; breadth 28 ft.; depth 8.3 ft; tonnage, 486 gross, 269 register.

The C.P.R. Great Lakes service will be performed this year by the steamships Assiniboia and Keewatin on the Port McNicoll route, and by the s.s. Manitoba on the Owen Sound route. The Manitoba will leave Owen Sound on Thursdays, commencing with the reopening of navigation, connecting with the train leaving Union Station, Toronto, at 5.25 p.m.; arrive at Fort William on Saturdays and Port Arthur on Sundays, and return to Owen Sound on Tuesdays, connecting with the train due at North Toronto at 8.10 p.m. On the Port McNicoll route, the service will commence June 2, and the vessels will leave Port McNicoll and Fort William on Wednesdays and Saturdays, and arrive at Fort William and Port McNicoll on Fridays and Mondays.

The Toronto Board of Control had before it recently a proposal of the Mayor that the city should keep the bay clear of ice during the winter months and assist in the maintenance of a steamship service for coal. He stated that he had had an interview with J. W. Norcross, Vice President and General Manager, and W. E. Burke, Assistant Manager, Canada Steamship Lines, Ltd., on the previous day, and a tentative arrangement had been made by which it was proposed to break up the ice in the bay and prepare a channel to the eastern entrance, so that vessels may be operated between Toronto and other lake ports to bring in coal. He also stated that if the city entered into an agreement for 10 years, to take coal, the company would build vessels capable of carrying 10,000 tons of coal.

An injunction has been obtained in an Ontario court by F. H. Clergue against the Lake Superior Dry Dock and Construction Co., restraining it until Mar. 15, from executing or recording any mortgage, lien, charge or encumbrance against any or all its property, and restraining individual members of the company from acting as directors and from dealing with the assets. The Lake Superior Dry Dock & Construction Co., Ltd., was formed in 1914 to take over an agreement between F. H. Clergue and Sault Ste. Marie City Council. and to build a dry dock at Sault Ste. Marie. In the agreement it was provided that work was to be commenced by Apr. 1, 1914, and the whole was to be complete and ready for operation by Apr. 1, 1916. The city voted a bonus of $20,000 a year for 20 years, gave a fixed assessment of $750,000 for school taxes for 20 years, and $500.000 for general taxes for 15 years, and the work was to be done to the Dominion Public Works Department's satisfaction, so as to earn the government subsidy of 3% per annum for 20 years on an expenditure of $1,330,-026.76.

In connection with the congestion of freight at the Niagara border, and the consequent dislocation of the coal service in Ontario generally, the Mayor of Toronto announced recently that to relieve the situation he would arrange immediately for the breaking up of the ice in Toronto Bay, and the opening of a channel between the coal docks and the eastern entrance to the bay, to enable coal to be brought in at once by steamship. Canada Steamship Lines, Ltd., announced that it had vessels ready for the traffic immediately the ice was cleared, and would run coal from Charlotte with two or three steamships if required. The coal situation, which had become acute in the early part of February, was relieved to some extent by the railways by the third week in the month. About this time, it was announced that one party had instructed another party, who in turn had held a conference with a third party as to certain requirement, after which the second party was to report to a commission, when it was possible a course of action would be decided upon. In the meantime the ice remains in the bay, and the steamships remain at their docks.

British Columbia and Pacific Coast.

The Vancouver Board of Trade is urging the city to provide a fire boat for the protection of shipping, etc., along the water front, where it is calimed fire protection is inadequate.

The Victoria City Council passed resolutions recently regarding the early construction of necessary facilities at the ocean docks and for the starting of work on the proposed dry dock at Esquimalt.

The C.P.R. is operating the s.s. Princess Beatrice on a new route from Vancouver to Powell River, Ocean Falls, Swanson Bay and intermediate points, on a weekly service to Swanson Bay, and fortnightly to Surf Inlet.

The C.P.R. has arranged with the Dominion Government, to maintain the Gulf Islands service with the s.s. Otter, pending the preparation of a new mail contract. The service was to have been discontinued Feb. 1.

The name of the steamboat Kezia, no. 133696, owned by Mackenzie & Pipe, Victoria, has been changed to Lornet. She is a small vessel of 39 register tons, and was built at Ballard, Wash., in 1901, and formerly named Challenge.

Press reports state that a syndicate interested in the building of wooden and steel vessels for the Norwegian trade, is negotiating for the purchase of the shipyard established at Coquitlam, B.C., at the junction of the Pitt and Fraser Rivers.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince John was driven ashore, towards the end of January, at Rocky Point, in the Wrangell Narrows, and was later beached at Finger Point. She was eventually refloated and taken to Victoria for examination.

The C.P.R. announces that its British Columbia Coast Service will give 17 round trip sailings on the Alaska route during the forthcoming season. The s.s. Princess Charlotte will make three round trips, the s.s. Princess Alice seven, and the s.s. Princess Sophia seven.

The breakwater at Ogden Point, Victoria, was completed at the end of January. The work was commenced in 1913, the contractors being Sir John Jackson (Canada), Ltd. Tenders are to be received for the construction of a lighthouse at the end of the breakwater.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince John, which stranded in Wrangell Narrows towards the end of January, was overhauled and repaired at North Vancouver, during February. Some 15 plates were replaced, the crank shaft drawn, and a new propeller placed.

The Vancouver Island Towing Co.'s steam tug Pilot is reported to have foundered with all hands, while engaged in salvaging the s.s. Sesostris off the Guatemalan coast. The tug left Salina Cruz Feb. 1 and has not since been heard of. She was built at Chemainus, B.C., in 1898, and was screw driven by engine of 90 n.h.p. Her dimensions were, length

127 ft., breadth 24.8 ft., depth 12 ft.; tonnage 279 gross, 148 register.

On another page are details of the Dominion Government's estimates for the current year, which are connected with navigation. Provision is made for the construction of two vessels for the Pacific Coast service, to replace the s.s. Quadra. We are advised that this matter is in abeyance for the present.

The first of the new type of lumber schooners with auxiliary power, under construction for Canada West Navigation Co. by Wallace Shipyards, Ltd., North Vancouver, was launched Jan. 27, and named Mabel Brown. Considerable details of this, and her sister vessels, have been given in previous issues.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince George is to be withdrawn from service Mar. 1, for a general overhaul. The s.s. Prince Rupert, which has been overhauled recently, replaces the Prince George, sailing from Prince Rupert, Mar. 2. The s.s. Prince John resumes the Alaska and Queen Charlotte Islands service, sailing from Prince Rupert Mar. 7, leaving Vancouver Mar. 3, to take up that route.

The Public Works Department has deepened the basin on each side of the Canadian Collieries' coaling wharf at Union Bay, Haynes Sound, on the east coast of Vancouver Island. On the west side there is an irregular basin 80 ft. wide at the outer end of the wharf tapering to a point 300 ft. inside the head, having a depth of 30 ft. or over. On the northeast side depths of 30 ft. etxend 340 ft. inside the head, except for a strip 15 ft. wide immediately alongside the wharf.

Some little jealousy appears to exist on the port of Victoria, owing to the fact that the vessels being built there for the Canada West Coast Navigation Co. are being registered at Vancouver, and have the name of Vancouver placed on their sterns. It is customary to have the vessels registered at their home port, and to have the name of the home port placed on the vessel's sterns, but it sometimes happens that the vessel is registered at the port where she is built. The matter is one entirely for the owners.

With regard to the shallow draught steamboat, under construction at Yarrow's yards, Esquimalt, some details of which were given in our last issue, it was reported that early in February the construction had reached an advanced stage, all the shell plating having been completed, with the exception of the bow end and the bilge. It was expected that the assembling of the hull would be completed by the end of the month, or early in March, when it will be knocked down, packed in sections and shipped to Burma. The machinery is supplied by the parent firm in Great Britain, and shipped direct, and the whole assembled where the vessel is to be utilized.

The Prince Rupert Board of Trade communicated recently with E. J. Chamberlin, President, Grand Trunk Pacific Ry., expressing dissatisfaction that the company's steamships were being overhauled and repaired at other yards than the company's own at Prince Rupert, and also that the company's headquarters at the coast are at Vancouver instead of Prince Rupert. Mr. Chamberlin stated in reply that in the recent repair of the s.s. Prince Rupert it was necessary that the vessel be repaired at Victoria, as the plates required were in stock there, but arrangements are being made that the company's vessels will be repaired at Prince Rupert in future, when such a course is practicable and the dry dock facilities are not in demand for government work. The question of moving the headquarters to Prince Rupert had been under consideration, but up to the present it had not been found practicable to make the change.

Mainly About Marine People.

H. McLaughlin has been appointed shipping master for the port of Montreal, vice R. S. White.

Mrs. C. J. Smith, wife of the master of Canada Steamship Lines' s.s. Cayuga, died at Toronto Feb. 19.

Jas. Carruthers, President, Canada Steamship Lines, Ltd., has subscribed £40,000 to the British War Loan in England.

H. J. Dick, accountant, has been appointed acting General Agent, Canada Steamship Lines, Ltd., Kingston, Ont., vice E. E. Horsey, resigned.

A. E. Mathews, Vice President, Mathews Steamship Co., Toronto, and Vice President, Dominion Marine Association, has gone to California for a holiday.

Lord Furness, Chairman, Furness, Withy & Co., arrived in New York at the end of January, and visited Canada. He is also associated with Canada Steamship Lines, Ltd.

Jas. Playfair, President and Managing Director, Great Lakes Transportation Co., Midland, Ont., who was operated on in Montreal some little time ago for appendicitis, has gone to California.

Capt. H. R. Mouck, who died at Port Colborne, Ont., Feb. 14, aged 89, had sailed on vessels of almost every type on the Great Lakes, during the past 70 years. He retired from active service several years ago.

Capt. David Warwick, of Froomfield, Ont., master of the s.s. David Mills, engaged in the lumber trade between Cleveland and Duluth, died suddenly at Marysville, Mich., after walking across the St. Clair River on the ice.

Capt. E. D. Anderson, who died at Detroit, Mich., Feb. 19, aged 79, was formerly commodore of the C.P.R. Great Lakes service. He retired from active service about nine years ago, on reaching the age limit fixed by the company's pension rules.

Peter Baldwin, who died at East Orange, N.J., Feb. 12, aged 78, was, some years ago, a well-known shipbuilder at Quebec, owning what was then known as the Baldwin shipyard. For several years subsequent to leaving Quebec, he represented the Quebec Steamship Co. in New York.

T. Ashley Sparks, whose appointment as General Agent for the U.S. Cunard Steamship Co., New York, was announced in a recent issue, has joined the board of directors of that company. He is also President, Funch Edye & Co., New York, which has recently become closely associated with the Cunard Co.

Capt. R. G. Bassett, master of the Bassett Steamship Co.'s s.s. Mariska, died at Toronto, at the home of his father, Capt. W. J. Bassett, Feb. 17, aged 33. He was born at Collingwood, Ont., and had been associated with navigation for some years, having formerly been in command of the Western Steamship Co.'s s.s. J. A. McKee.

One of our Canadian contemporaries says: "Wm. Phillips has been appointed by the Canada Steamship Line as their representative in the office of the Robt. Reford Co., Montreal, general agents for Canada." This will be "news" to the Canada Steamship Lines management and to Mr. Phillips, who, as previously stated in Canadian Railway and Marine World, has been appointed Canadian Representative, Cunard Steamship Co.

Capt. Edward Martin, Superintendent of the Halifax Dockyards, who has been created a Companion of the Order of St. Michael and St. George, entered the Royal Navy in 1873, and has served on Admiralty stations in various parts of the world. He came to Canada in 1910, when the Dominion inaugurated a Naval Service Department, and has since been senior naval officer in charge of the dockyard and the Royal Naval College.

J. F. Condon, who has been appointed General Passenger Agent, Great Lakes Transit Corporation, Buffalo, N.Y., was City Passenger and Ticket Agent, Erie Rd., there, for the past eight years, and in addition to those duties, had charge of the Cleveland & Buffalo Transit Co.'s Buffalo office, and acted as agent for the various trans-Atlantic steamship lines. He commenced his transportation service as ticket clerk, Lehigh Valley Rd., Buffalo, N.Y., about 15 years ago.

Regulations Respecting His Majesty's Vessels.—The order in council, dated Nov. 15, 1916, amending the regulations for the government of the port of Halifax, N.S., respecting rules to be observed when His Majesty's ships leave the harbor, has been cancelled, and the regulations are amended by providing that such vessels when leaving the port shall hoist the letter O (International Code) at the foremast head, instead of the Union Jack.

Atlantic Mail Service Subsidies.—The Minister of Trade and Commerce stated in the House of Commons recently that the following subsidies were paid in 1916 for trans-Atlantic mail service: Canadian Pacific Ocean Services, Ltd., winter service at $11,363.63 per round trip, $159,090.82; summer service, at $5,291 per round trip, $100,529; a total for this company of $259,619.82; White Star-Dominion Line, half trip, $2,645.50. The subsidy claim for December quarter had not then been received.

Triangle Island.—The Marine Department has completed a short line of railway from Howes Harbor to the lighthouse on Triangle Island, B.C., 2.5 miles. The ties and other lumber required were secured locally, and the steel rails were part of those used during the construction on the Sooke waterworks project. A gasoline propelled car is used on the line, which was built mainly for the purpose of the transfer of stores and supplies to the lighthouse.

Proposed Dam on the St. Clair River.—The International Joint Waterways Commission has before it an application to build a submerged dam across the St. Clair River, to raise the level of Lake Huron. Opposition to the scheme is made by the Dominion Government, and all those interested in the maintenance of the levels on Lakes Erie and Ontario and the St. Lawrence River.

Toronto Water Borne Traffic.—The Minister of Customs stated in the House of Commons recently that for the year ended Mar. 31, 1916, 2,771 vessels, of a total of 1,636,620 tons register, arrived at Toronto, and 2,722 vessels departed, of a total of 1,366,723 tons register. There is no customs record of the tonnage of freight carried by these vessels.

Among the Express Companies.

W. F. Crichton has been appointed agent, Dominion Ex. Co., West Toronto, Ont., vice T. Townsend, deceased.

H. M. Watson has been appointed cashier, Dominion Ex. Co., Moose Jaw, Sask., vice G. A. Brown, promoted.

G. E. Bellrose has been appointed Traffic Supervisor, Canadian Northern Ex. Co., Winnipeg.

W. W. Williamson, General Auditor, Canadian Ex. Co., Montreal, has been elected grand master of the Grand Lodge of Quebec, A.F. & A.M.

A. E. Yuill, heretofore agent, Estevan, Sask., has been appointed agent, Dominion Ex. Co., Brandon, Man., vice D. H. Taylor, transferred.

G. A. Brown, heretofore cashier, Moose Jaw, Sask., has been appointed agent, Dominion Ex. Co., Estevan, Sask., vice A. E. Yuill, transferred.

The Dominion Ex. Co. has opened offices at York, P.E.I., and Metis Beach, Que., and has closed its offices at Aldershot and Musquodoboit, N.S., and Plourde, Que.

The Wells, Fargo Co. has concluded arrangements with the London Railway Commission to establish an office at London, Ont., and to operate an express service over the London & Port Stanley Ry.

The Board of Railway Commisisoners has approved revised Supplement 10 to Express Classification for Canada, C.R.C. 3, submitted to the board by C. N. Ham, Secretary, Express Traffic Association of Canada, Jan. 16.

Canadian Northern Ex. Co. employes at Winnipeg have formed an association for instruction and entertainment. Monthly meetings will be held, when an address will be delivered by one of the officials, on a subject connected with express work, which will be followed by a social evening.

The Minister of Railways, in replying to questions in the House of Commons, Feb. 7, stated that the Canadian Ex. Co. operates its service over the National Transcontinental Ry. from Quebec to Winnipeg. On account of the war, it was thought advisable to make a temporary arrangement with the Canadian Ex. Co. for the service.

The Dominion Ex. Co. was fined $150 and costs at Edmonton, Alta., Jan. 30, for carrying intoxicating liquor between Saskatoon, Sask., and Edmonton, Alta. In making a conviction, the magistrate stated that the accused had failed to prove that it had good reason for believing that the liquor brought from Saskatchewan into Alberta would only be dealt with in a lawful manner.

Wm. Thos. Anderson, Assistant Treasurer, Canadian Express Co., died at Montreal, Feb. 12, after 42 years service. He was born at Iroquois, Ont., in 1853, entered the C. E. Co.'s service in 1875 as junior clerk in the Money Department, later becoming the head of same. In 1891 he was appointed Auditor, Money Order Department, and in 1899, Assistant Treasurer, which position he held until his death.

Jas. H. Sonne, who has been appointed acting Assistant Treasurer, Canadian Express Co., Montreal, vice W. T. Anderson, deceased, was born in Dunedin, New Zealind, in 1869. He entered the C. E. Co.'s service in 1887 as junior clerk. In 1890 he was transferred to the Money Department, later having charge of same; was appointed Cashier at Montreal office in 1912, and acting Assistant Treasurer on Feb. 1, 1917.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Preston Car & Coach Co.—Preston, Ont., ratepayers are being asked to vote on a bylaw to lend this company $75,000 to rebuild the car plant destroyed by fire recently.

The Independent Pneumatic Tool Co., Thor Building, Chicago, Ill., has ready for distribution a 4 pg. folder illustrating and describing in detail the Thor line of portable electric drills and grinders, which consists of eight different sizes of electric drills, with capacities ranging from ¼ to 2 in., and a portable electric grinder with wheel ¾ x 4 in.

Locomotive Superheater Co., 30 Church St., New York, N.Y., has issued bulletin 2 on fire tube marine superheaters, giving a list of 69 vessels fitted with its fire tube superheaters and entering United States ports, the object being to give ship owners and engineers an opportunity to inspect the vessels and to obtain at first hand reliable information as to the results which are being obtained.

The Electric Railways Improvement Co., Cleveland, Ohio, has developed a light portable outfit for electric welding rail bonds, which consists of an electric furnace, weighing 65 lbs., and a rheostat, weighing 200 lbs. By means of these two pieces of apparatus, current may be taken from the trolley and utilized in welding the copper rail bond to the rail. It is claimed that when the weld is completed, the copper of the bond and the steel of the rail are so intimately and firmly united that there is no chance for a depreciation of the electrical contact thus made. The electric furnace measures about 6 x 8 x 8 in. and when in operation is supported by a yoke resting on the top of the rail. The final adjustment for position is accompliished by means of 2 hand wheels, which give the operator complete control of the position of the furnace. The heat is transmitted to the bond by an incandescent piece of graphite pressing against it. No flame or arc strikes either the bond or the rail. Likewise there is no arc exposed to the eye, thereby doing away with the blinding effect of intense light. The rheostat measures about 15 x 20 x 24 in. and is equipped with switches and circuit breaker. By means of it, the electric furnace can be used with a line voltage of anywhere from 150 to 600 volts. It is equipped with handles, making it handy for two men to carry. The furnace may be placed on the top of the rheostat while moving from one rail joint to the next, thus making an easily portable outfit. The whole outfit may, if desired, be mounted on a 4-wheeled lorry for pushing along the track. The power consumption of the welder is claimed to be from 1 to 1½ k.w. hours per 4/0 bond. It is claimed by the manufacturers that it will put electric welded bonds within the reach of the smaller electric railways, will also be in certain demand by the larger roads, for use where traffic or other conditions forbid the use of a larger and more complicated apparatus.

Reynolds Timber Shipping and Insurance Agency, Ltd., has been incorporated under the Dominion Companies Act, with $40,000 capital, and office at Vancouver, B.C., to carry on a general produce, manufacturing, shipping and warehouse business, and in connection therewith to own and operate steam and other vessels, wharves, docks, etc., and to act as financial, insurance, commercial and vessel agents.

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Transportation Conventions in 1917.

Mar. 20-22.—American Railway Engineering Association, Chicago, Ill.
May.—Association of Railway Claim Agents, Louisville, Ky.
May 1-4.—Air Brake Association, Memphis, Tenn.
May 9-11.—Railway Development Association, Louisville, Ky.
May 14-17.—International Railway Fuel Association, Chicago, Ill.
May 15-16.—International Association of Ticket Agents, Banff, Alta.
May 16.—American Railway Association, New York.
May 22-25.—Master Boiler Makers' Association, Richmond, Va.
May 30.—Association of American Railway Accounting Officers, Richmond, Va.
June.—American Association of Freight Agents, Denver, Col.
June 13-16.—American Railway Master Mechanics' Association, Atlantic City, N.J.
June 18-21.—Master Car Biulders' Association, Atlantic City, N.J.
June 19.—Freight Claims Association, Banff, Alta.
August.—International Railroad Master Blacksmith's Association, Chicago, Ill.
Aug. 8-10.—American Association of Railroad Superintendents, Minneapolis, Minn.
September.—Railway Signal Association, Atlantic City, N.J.
Sept. 11.—Master Car and Locomotive Painters Association of the United States and Canada, Chicago, Ill.
Oct. 16-20.—National Association of Railway Commissioners, Washington, D.C.
Sept. 18-20.—Association of Railway Telegraph Superintendents, Washington, D.C.
Sept. 18-21.—Roadmasters and Maintenance of Way Association, Chicago, Ill.
October.—American Association of Dining Car Superintendents, San Francisco, Cal.
October.—Railway Real Estate Association, Duluth, Minn.
Oct. 16-18.—American Railway Bridge and Building Association, St. Paul, Minn.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:
Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.
Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.
Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.
Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.
Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.
Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
Dominion Marine Association—F. King, Counsel, Kingston, Ont.
Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.
Express Traffic Association of Canada—C. N. Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.
Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.
International Water Lines Passenger Association—M. R. Nelson, New York.
Niagara Frontier Summer Rate Committee — James Morrison, Montreal.
Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.
Quebec Transportation Club—A. F. Dion, Quebec.
Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.
Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.
Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.
Transportation Club of Vancouver—H. W. Schofield, 553 Granville Street, Vancouver, B.C.
Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.
Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

Canada Shipping Co., Ltd., has increased its capital stock from $20,000 to $400,000.

Dominion Bridge Company, Limited

Head Office and Works, MONTREAL, P.Q.

Branch Offices and Works, TORONTO, OTTAWA and WINNIPEG

Lachine Bridge

Engineers, Manufacturers and Erectors of Steel Structures.
CAPACITY 135,000 TONS.

Railway and Highway Bridges, Swing and Bascule Spans, Buildings of all kinds, Hemispherical Bottom and other Tanks, Transmission Poles and Towers, Riveted Pipe, Caissons, Barges, Turntables, Electric and Hand Power Cranes, Hoisting Appliances, Lift Locks, Hydraulic Regulating Gates, etc. Gear Cutting and General Machine Work.

Large Stock of Standard Structural Material at all Works.

"Claude" Oxygen

Oxy-Acetylene

WELDING AND CUTTING PLANTS
MADE IN CANADA

All large railway shops are applying our systems to numerous uses. Welding frames, building up tires, boiler patches, welding flues. Also for cutting up scrap.

Cut out coupon for interesting booklet.

L'Air Liquide Society

Three Canadian Distributing Stations

26 Boler Street, West Toronto
325 William Avenue, Winnipeg
Maisonneuve, Montreal

L'Air Liquide Society, Maisonneuve, MONTREAL, P.Q.

Gentlemen,—Will you please send, without obligation to me, postpaid, your New Booklet?

Name . . ..
Address . . ..
Province ..... Date .....
Business . .....

R & M

CANADIAN PACIFIC RAILWAY.

Dividend Notice.

At a meeting of the Board of Directors, held to-day, the following dividends were declared:—

On the Preference Stock, two per cent. for the half year ended 31st December last, payable 31st March next to stockholders of record at 3 p.m. on 22nd February instant.

On the Common Stock, two and one-half per cent. for the quarter ended 31st December last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account, payable 31st March next to shareholders of record at 3 p.m. on 1st March next.

By order of the Board,

ERNEST ALEXANDER,
Secretary.

Montreal, 12th February, 1917.

THE VICTORIA ROLLING STOCK & REALTY CO., OF ONTARIO, LIMITED.

NOTICE is hereby given that the Annual Meeting of the Shareholders of the Victoria Rolling Stock & Realty Company of Ontario, Limited, will be held at the offices of Messrs. Osler & Hammond, 21 Jordan Street, Toronto, on Wednesday, March 7, 1917, at twelve o'clock noon, for the reception of the Annual Report and election of Directors for the ensuing year.

By order,

H. F. MARRIOTT,
Secretary.

Toronto, February 16, 1917.

EMPLOYMENT WANTED.

Financial Officer having number of years experience with financial and accounting departments of both public service corporations and industrial plants, desires change, and now open for engagement. Experience covers United States and Canada. Best of reasons confidentially given for desiring change. Address Box 87, Canadian Railway and Marine World.

It Pays to carry an advertisement in the Canadian Railway and Marine World every issue of the year because you obtain proportionately better **Results**

Car Closets
Flush or Dry
DUNER CO. 101 S. CLINTON ST. CHICAGO

IMPERIAL BANK
OF CANADA

Capital Authorized $10,000,000
Capital Paid up 7,000,000
Reserve Fund 7,000,000

Head Office: Toronto.

Letters of Credit, Travellers' Cheques and Drafts issued, available in all parts of the World.

Sterling and New York Exchange bought and sold.

Savings Department: Interest allowed on deposits at best current rates.

Branches throughout the Dominion of Canada.

JOLIETTE STEEL
TRADE MARK REGD.
CASTINGS

The uniform perfection of **Joliette Steel Castings** is assured. Any possible flaw is discovered in our process of inspection and the casting thrown out.

Specify Joliette Steel Castings on your next car order. Get our prices on repeat orders.

Prompt Shipment Guaranteed.

Joliette Steel Company
Limited

Main Office:
903 Read Bldg.,
Montreal

Telephone
Main 402

Works:
Joliette, Que.

Hunt-Spiller Gun Iron
IN
Locomotive Castings

SAVES MONEY

INCREASES: Engine Efficiency—Engine Mileage.
DECREASES: Engine Failures—Engine Repairs.

MADE ONLY BY

Hunt-Spiller Mfg. Corportation
W. B. LEACH, President and General Manager.

Office and Works,
383 Dorchester Avenue,
So. Boston, Mass.

J. G. Platt,
Sales Manager.

Canadian Representatives:
Canuck Supply Company, Limited,
392 St. James St., Montreal, P.Q.

Ottawa Traction Company, Limited

Third Annual Report for Year Ending December 31, 1916

Your Directors have much pleasure in submitting their third annual report for the year ending Dec. 31, 1916, including the operation of The Ottawa Electric Railway Co.

Gross earnings of the Ottawa Electric Railway Company were	$1,154,912 53
Operating expenses and maintenance	670,348 04
Net earnings	$ 484,564 49
Net earnings, 1915	383,774 58
Increase, 1916	$ 100,789 91

The net earnings were disposed of as follows:—

Four quarterly dividends of 3% and a bonus of 3%	$ 281,535 00
Interest on bonds and loans	48,301 47
Mileage payments	16,442 94
Taxes	20,351 80
War tax	21,143 58
Contingent account—Depreciation, 1916	65,000 00
Transferred to credit of profit and loss	31,789 70
	$ 484,564 49

27,033,778 passengers were carried, compared with 24,361,867 in 1915, an increase of 2,671,911.

The balance at credit of Profit and Loss Account is now $249,504.54, and of Rest Account $200,000. The net result of the year is that we have paid the usual dividends of 3% quarterly and a bonus of 3%, also the war tax amounting to $21,143.58, and have written off $65,000 for depreciation, and placed $31,789.70 to credit of Profit and Loss Account. Business took an upward turn in January and every month throughout the year showed a large increase in receipts over former years. Expenses likewise increased, but not in the same ratio.

The only expenditure of importance in the way of new work or renewals carried out this year was the reconstruction of the tracks on Rideau St. from the West side of Sussex St. to Waller St., and replacing the old rail with a heavy girder rail. Being in the heart of the system it was a very difficult piece of work to execute. No extensive work of renewals is contemplated for the coming year, but the endeavor will be to maintain the tracks, rolling stock, and other properties in a highly efficient state of repair. With traffic increasing in such a ratio as at present we will in the near future require to make a substantial increase in rolling stock equipment.

Your directors regret to report the death of Mr. Redmond Quain, and desire to place on record their appreciation of his valuable services throughmany years. He was a director of the original company, having been elected in 1891, and remained a director through the different changes of name up to the time of his death.

The valuable and faithful services rendered by the officers and employes of the company are much appreciated by the Board.

A successful year is looked forward to with confidence.

All of which is respectfully submitted.

T. AHEARN, President.

Ottawa, Feb. 5, 1917.

THE OTTAWA ELECTRIC RAILWAY COMPANY.

ASSETS AND LIABILITIES, DEC. 31, 1916.

Assets.

Roadbed and equipment, water power property and plant, real estate and buildings	$3,339,313 11
Cash	6,695 00
Stores	43,010 67
Insurance paid on account of period beyond Dec. 31, 1916	5,000 00
Accounts Receivable	1,323 52
	$3,395,342 30

Liabilities.

Capital stock	$1,876,900 00
First mortgage bonds	425,000 00
Bills payable	434,100 00
Dividend No. 91, payable January 2nd, 1917	112,614 00
Interest on bonds, payable January 5th, 1917	8,500 00
Accounts payable	23,203 09
Unpaid dividends	520 67
Contingent account, depreciation, 1916	65,000 00
Rest account	200,000 00
Profit and loss account	249,504 54
	$3,395,342 30

Profit and Loss Account.

Dividend 88. April 1, 1916, 3%	$56,307.
Dividend 89. July 2, 1916, 3%	56,307.
Dividend 90. Oct. 2, 1916, 3%	56,307.
Dividend 91. Payable Jan. 2, 1917, 3% and bonus of 3%	112,614.
	$281,535 00
Taxes	20,351 80
War tax	21,143 58
Mileage payments	16,442 94
Interest on bonds and loans	48,301 47
Contingent account, depreciation, 1916	65,000 00
Balance at credit of profit and loss, Dec. 31, 1916	249,504 54
	$702,279 33
Balance at credit of profit and 1% loss, Dec. 31, 1915	51,702. $217,714 84
Net earnings, year ending Dec. 31, 1916	484,564 49
	$702,279 33

Certified correct,

H. T. BURPEE, Auditor. JAMES D. FRASER, Sec'y-Treas.

Ottawa, Feb. 5, 1917.

OTTAWA TRACTION COMPANY LIMITED

STATEMENT OF ASSETS AND LIABILITIES, DEC. 31, 1916.

Assets.

17,262 shares of The Ottawa Electric Railway Co. Par value $100 each	$5,178,600 00

Liabilities.

Capital stock	$5.178.600 00

RECEIPTS AND PAYMENTS FOR YEAR ENDING DEC. 31, 1916.

Receipts.

Dividends received from The Ottawa Electric Railway Co.	$258,672 00

Payments.

Dividend 8. April 1, 1916, 1%	$51,672.
Dividend 9. July 2, 1916,	
Dividend 10. Oct. 2, 1916, 1%	51,726.
Dividend 11, payable Jan. 2, 1917, 1% and bonus 1%	103,572.
	$258,672.00

Certified correct,

H. T. BURPEE, Auditor. JAMES D. FRASER, Sec'y-Treas.

Ottawa, Feb. 5th, 1917.

OTTAWA TRACTION COMPANY, LIMITED.

Directors.

T. AHEARN - - - President
WARREN Y. SOPER, Vice-President
T. F. AHEARN. Col. G. P. MURPHY.
E. N. SOPER. J. F. SMELLIE.
T. WORKMAN. JAMES D. FRASER.

THE OTTAWA ELECTRIC RAILWAY COMPANY

Directors.

T. AHEARN - - - President
WARREN Y. SOPER, Vice-President.
T. F. AHEARN. T. WORKMAN.
E. N. SOPER. J. D. FRASER.
JAMES D. FRASER - Sec'y-Treas.

Dominion Steel Foundry Company, Limited, Hamilton, Ont.

Locomotive Frames Car Bolsters Car Castings Heavy Machinery Castings

Annual Capacity 50,000 Tons

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LAST ALL

Compare This "Safety" Fixture With Bare Lamps, Etc.

Made for Attractive Car Lighting and Absolute Safety

The well established fact that brightly lighted cars produce greater returns than dull, dingy cars sells thousands of Safety Car Lighting Fixtures each year.

Good Lighting these days is good advertising. It reflects prosperity, pleases the public and makes for attractiveness.

Safety Fixtures are standard the world over on account of their exclusive safety features. They are designed for use with various types and sizes of reflectors and lamps so that proper relation between the reflector and lamp is assured in any combination.

You will actually save money by using Safety Fixtures.

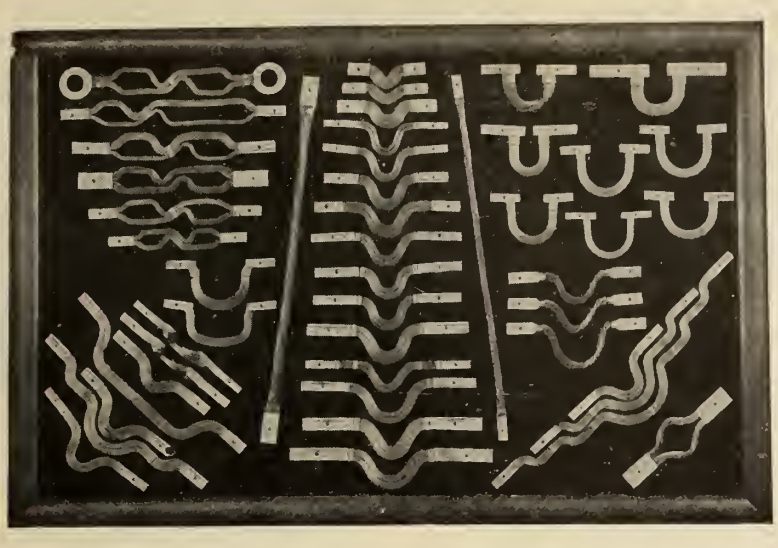
Write for our booklets giving complete information.

Electric Service Supplies Co.

PHILADELPHIA NEW YORK CHICAGO
17th and Cambria Sts. 50 Church St. Monadnock Bldg.

Lyman Tube & Supply Co., Ltd.

MONTREAL TORONTO
323 St. James St. 33 Melinda St.



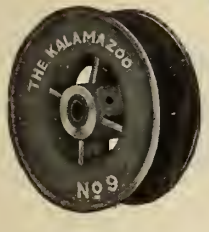
Electric Weld Rail Bonds

meet every condition.

Neither do they corrode at the terminals.

The Electric Railway Improvement Co.

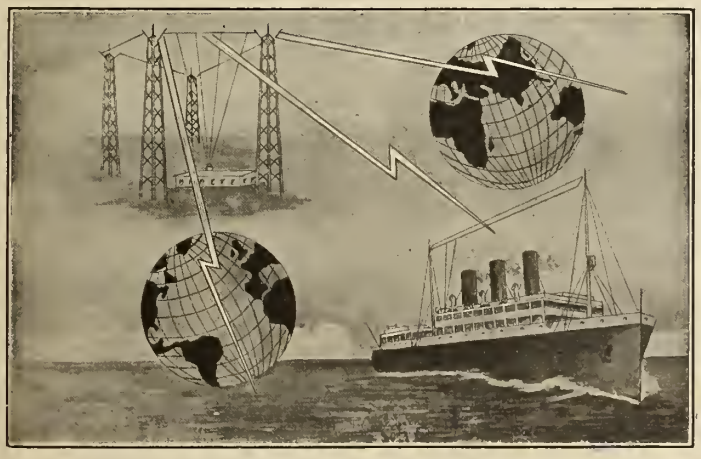
Cleveland, Ohio



The Star Brass Works

Largest Exclusive Trolley Wheel Makers in the World.

Kalamazoo **Michigan**



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Marconi Wireless Telegraph Apparatus

Ship sets suitable for liners, yachts, tugs, freighters and scows our speciality.

Have you considered the advantage of connecting up factory or mine to head office by wireless? We will sell or rent you a system to cover all your requirements.

Of the world's wireless stations 80% are **Marconi.**

Consult: "Marconi" the World-Wide Wireless

Canadian Marconi Company

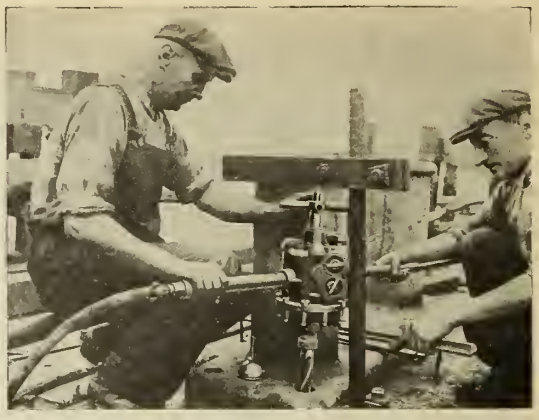
Head Office, 137 McGill St., Montreal

Thor

Roller Bearing Piston Air Drills

Will turn out more work on less air than any pneumatic tools made. Equipped with Corliss Valves, patterned after the famous Corliss Engine, roller bearings, telescopic screw-feed, etc.

Most Powerful, Durable and Economical Air Drills made.
SHIPPED ON TRIAL—FREE.

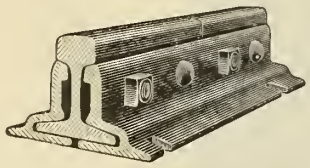


Size B Thor Drill drilling 1 5-16 inch hole in towing bit. Machinists gang.

Independent Pneumatic Tool Company
334 St. James Street, Montreal, Que.
Toronto—32 Front St. West Winnipeg—123 Bannatine Ave. East Vancouver—1142 Homer Street

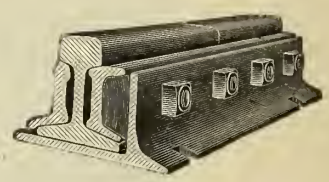
The Rail Joint Company of Canada, Limited

McGill Bldg., MONTREAL
36 Broad Street, London, E.C.

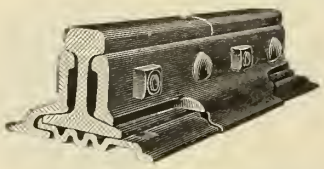


CONTINUOUS

Continuous,
Weber, Wolhaupter and
100 p.c. Rail Joints.



WEBER



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Standard—Insulated
Step—Frog and Switch
Protected by Patents.

Grand Prize, San Francisco, 1915.

100 p.c.

No Loose Battery Connections

The Columbia Hot Shot is the last word in railway motor car ignition. By its use all chances of loose battery connections are eliminated.

Instead of a number of dry cells wired up in haphazard fashion you have a compact, weatherproof battery with but two binding posts. All connections are permanently soldered in place, making loose connections impossible.

Columbia Hot Shot Batteries are made in several sizes and voltages. We will be glad to send descriptive literature on request.

Canadian National Carbon Co., Limited
265 Adelaide Street West, Toronto, Ont.

ENAMELED IRON SIGNS

The ideal signs for

Steam and Electric Railways, Telegraph, Telephone and Express Companies.

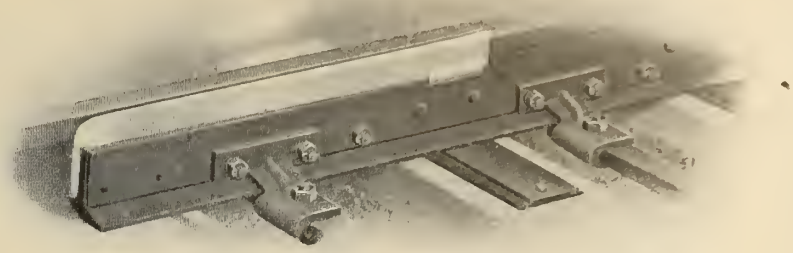
We supply them in any sizes and colors, for station names, door signs, route numbers, etc,

Guaranteed not to fade or be affected by the weather in any way.

Acton Burrows
Limited

Enameled Iron Signs

70 Bond Street - Toronto



Ramapo Manganese Reinforced Switch Point

Note that the Switch Rail is continuous to the end of the Switch, leaving no joint to work loose. This construction in hard service will outwear all rail point five to one.

Canadian Ramapo Iron Works Limited

NIAGARA FALLS ONTARIO

TAPS

Reamers
Cutters
Drills
Dies

Made in Canada

Sold on Merit

Ask for our new catalogue No. 8

Pratt & Whitney Co.
of Canada, Limited

DUNDAS - ONTARIO

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The Greatest Navies of the World

use Gargoyle Marine Oils, the products of the Vacuum Oil Company. These oils are employed exclusively also by the best managed merchant-marine fleets.

Gargoyle Marine Oils are especially manufactured for Marine use, and therefore are accurately adapted to it. There is a suitable product for every contact surface.

GARGOYLE MARINE ENGINE OIL No. 1
GARGOYLE CYLINDER OIL 600 W

are two of these lubricants most widely required. They give complete satisfaction; prevent burned out bearings, scored cylinder walls, unnecessary repairs, and excess fuel consumption.

Gargoyle Oils can be had at all ports. There are special distributing stations at

Fort William	Quebec
Halifax	Sault Ste. Marie
Hamilton	Sarnia
Kingston	St. John, N.B.
Montreal	Toronto
No. Sydney	Vancouver
Ottawa	Victoria, B.C.
Owen Sound	Windsor

Look for the Imperial Oil Company's Depot.

THE IMPERIAL OIL COMPANY LIMITED

Canadian Agents,
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JOHNS-MANVILLE PRODUCTS

Roofing and Slii Coverings
Packings Gaskets
Pipe Coverings Hair Felt
Transite Smoke Jacks
Transite Asbestos Wood
Waterproofing
Cork
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Flexible Armored Squirt Suction, Tank, Hose
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TORONTO MONTREAL WINNIPEG VANCOUVER

Non-Sweating Railway Lamps

We manufacture
SWITCH MARKER CLASSIFICATION SEMAPHORE
to R.S.A. Specification.

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AIR BRAKE INSTRUCTION

Our different Air Brake Scholarships give a thorough knowledge of the construction and operation of air-brake systems. They convey complete instruction to The Westinghouse Air Brake and The New York Air Brake, including full treatment of all "diseases" to which these mechanisms are subject, and the manner of making repairs.

All of this is done by mail, in your spare time, and at small cost. Write for Railway Department Circular.

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Box 8413, Scranton, Pa.

Dominion Coal Company Limited

"Dominion"

and

"Springhill"

Steam and Gas Coals

General Sales Office

112 St. James Street
MONTREAL

The Garrow Light

You will appreciate the advantage of a combination acetylene burner and oxy-acetylene cutting off machine.

The Garrow Light can be supplied as a light only, giving 8000 candle power, or, as a combination machine complete with Regulators, Gauges, Nozzles, etc.

For cutting off, it is wonderfully efficient. It will cut an 8" I Beam, or a 3" shaft less than one minute.

Write our nearest branch for prices.

The Canadian Fairbanks-Morse Co., Limited

ST. JOHN, QUEBEC, MONTREAL, OTTAWA, TORONTO, WINDSOR, HAMILTON, WINNIPEG, SASKATOON, CALGARY, VANCOUVER, VICTORIA

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CANADA'S DEPARTMENTAL HOUSE FOR MECHANICAL GOODS

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STANDARD

Wires and Cables are cheapest in the end because their superior quality gives them greater durability and dependability.

Standard Underground Cable Co. of Canada, Limited

Hamilton, Ont.

Montreal Hamilton Winnipeg Seattle

ESTABLISHED 1849.

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Capital and Surplus, $1,500,000.
Offices throughout the Civilized World.

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N.Y. CITY, U.S.A.

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Subscriptions are based on the service furnished and are available only by reputable wholesale jobbing, and manufacturing concerns, and by responsible and worthy financial, fiduciary, and business corporations. Specific terms may be obtained by addressing the Company at any of its offices. Correspondence invited.

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Halifax, N.S.; Hamilton, Ont.; London, Ont.; Montreal, Que.; Ottawa, Ont.; Quebec, Que.; St. John, N.B.; Toronto, Ont.; Vancouver, B.C.; Calgary, Alta.; Edmonton, Alta.; Winnipeg, Man.; Victoria, B.C.

THOS. C. IRVING,
Gen. Man. Western Canada, Toronto.

NICKEL

INC

Shot—High and low carbon. Ingots—Two sizes, 25 lbs., 50 lbs.
Electrolytic Nickel—99.80 p.c.

Prime Metals for the Manufacture of Nickel Steel, German Silver, Anodes and all remelting purposes. Our Nickel is produced as Rods, Sheets, Strip Stock, Wire and Tubes.

MONEL METAL Reg.U.S. Pat.Off.

We are SOLE PRODUCERS of this natural stronger-than-steel, non-corrodible alloy. Manufactured forms are Rods, Flats, Castings, Tubes, Sheets, Strip Stock and Wire. Send Inquiries Direct to Us.

The International Nickel Co., 43 Exchange Place, N.Y.

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P.O. Box 97, Windsor, Ont.

Canadian manufacturers of the Celebrated Wheel Truing Brake Shoe. Best Wheel Grinders in the World.

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VAPOR SYSTEM AND STEAM HEAT SPECIALTIES

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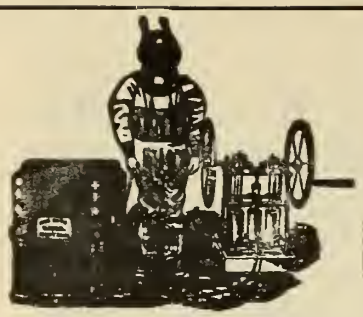
NEW YORK, GRAND CENTRAL TERMINAL BLDG.
ATLANTA GA., CANDLER BLDG.
WASHINGTON, D.C., MUNSEY BLDG.

Canadian Factory and Office—61 Dalhousie St., Montreal A. D. BRUCE, Agent



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Manufacturer of

Diving Apparatus

For Sale or Hire

Brass Founder and Coppersmith

13-15 Concord St., Montreal

The Preston Car & Coach Co., Limited

Preston, Ont.

Manufacturers of

Steam and Electric Railway Cars and Special Cars.

Insist on having

DREWRY'S American

STYLE RICE

BEER

The best beer—without exception

E. L. Drewry, Ltd., Winnipeg

FOR TICKET CASES AND COMMERCIAL FURNITURE

of all descriptions to stock or special design, apply to

The Canadian Office and School Furniture Co., Limited

Preston - Ontario

Which Method

prevails in your plant? Does it take two men to do one man's work.

Why don't you replace that old antiquated tool with a new up to date

Reece's New Screw Plate

These pictures do not exaggerate conditions as you can actually see them, if you will visit Machine Shops throughout the country.

Lessen your cost by giving your mechanics a REECE'S NEW SCREW PLATE.

Butterfield & Co., Inc.

Rock Island, Que,

"STERLING" High Duty Power Hack Saw Machine

Cuts round material up to and including 6 in.

Manufactured by

Diamond Saw & Stamping Works,

Buffalo, N.Y., U.S.A.

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THE ARNOLD COMPANY
ENGINEERS—CONSTRUCTORS.
ELECTRICAL—CIVIL—MECHANICAL
REPORTS, DESIGN AND CONSTRUCTION
Complete Railway Shop and Terminal Properties—Electrification of Steam Railroads.
OUR EXPERIENCE COVERS THIRTY-FIVE PLANTS
NEW YORK CHICAGO

ANGUS SINCLAIR, C.E.
Railway Contractor
Office: Imperial Bank Building, King and Sherbourne Sts., Toronto.

ANALYSES — Alloys, Waste Oils, Coal, etc.
TESTS — Steel, Cement, etc.
Milton Hersey Co. Ltd.
MONTREAL WINNIPEG NEW YORK

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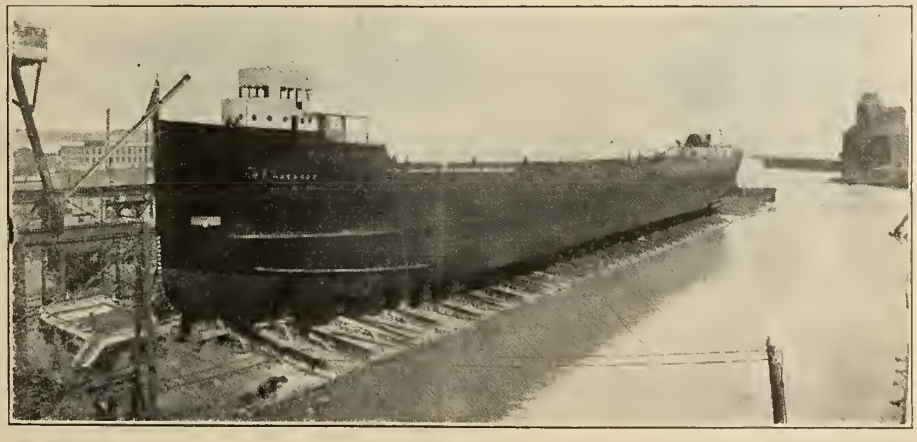

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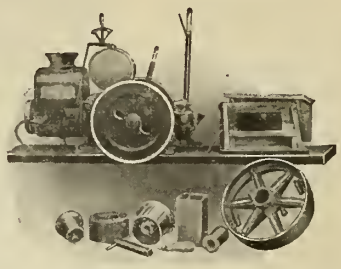

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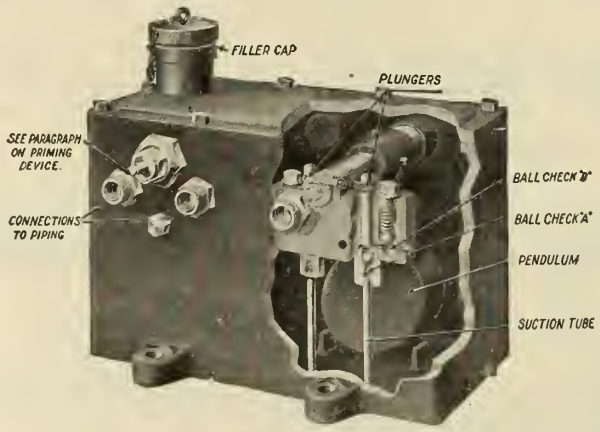

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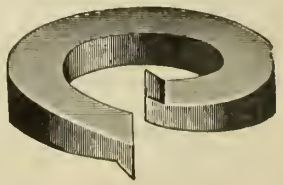

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Canadian Detroit Lubricator Co.
Ohio Brass Co.
VALVES, BRASS GATE
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Ohio Brass Co.
VALVES, LOCOMOTIVE POP
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Jas. W. Pyke & Company, Limited

Iron, Steel and Metal Merchants

Locomotive, Driving, Engine and Tender Truck Axles, Passenger, Freight, and Electric Tram Car Axles—To Standard or Railway's own Specification.

Staybolt and Engine Bolt Iron—Quality and Service Unexcelled.

Steel Plates—Firebox, Flange and Tank Qualities.

Structural Shapes—Beams, Channels, Angles, Tees, Zees, etc.

Steel Billets and Forgings—of all descriptions.

Locomotive Boiler and Superheater Tubes—Seamless and Lapwelded.

We solicit your enquiries when in the market for any of the above material.

OFFICE: Commercial Union Building,
232 St. James Street,

Montreal

Quality

THE leader in every industry, to maintain his lead, must safeguard the quality of his products.—Rigid inspection and careful supervision are important factors. —To products of iron and steel this principle applies with tremendous force.—It means safety, security and stability.—We safeguard the quality of our products, believing quality will be recognized long after the price is forgotten.

Service

OUR customers must be served. One of the dominating factors in any successful business is Service. —We succeed only through the good will and good wish of the people we serve.—This thought permeates our entire Organization, from the President down.—Our employees feel the sense of responsibillty this principle implies; and each one directs his efforts to maintain the high standard of service we aim to render.

THE
STEEL COMPANY
OF
CANADA
LIMITED
HAMILTON - - MONTREAL

Saving 40% in Handling Ties

WITH the present labor situation, handling of material is one of the perplexing problems that confronts the railways today.

The Buffalo, Rochester & Pittsburgh Ry. solved this problem at their Beaver Dam Creosoting Plant by using a Brownhoist to load ties.

By the aid of specially designed tongs, six ties are picked up automatically and deposited upon the cars.

A 40% saving was affected on this method of handling over the previous piece work method formerly employed. The operative speed together with its safety—two of the three big features of the Brownhoist—and the low operating and maintenance costs made possible this big saving.

There are many such jobs as this one, on which a Brownhoist will solve the labor question at a big saving—besides increasing production efficiency fully 75%.

Bear in mind, that in considering a locomotive crane, actual first cost should not be the deciding factor; it is performance records—records for maintenance and operation that should be the deciding factor.

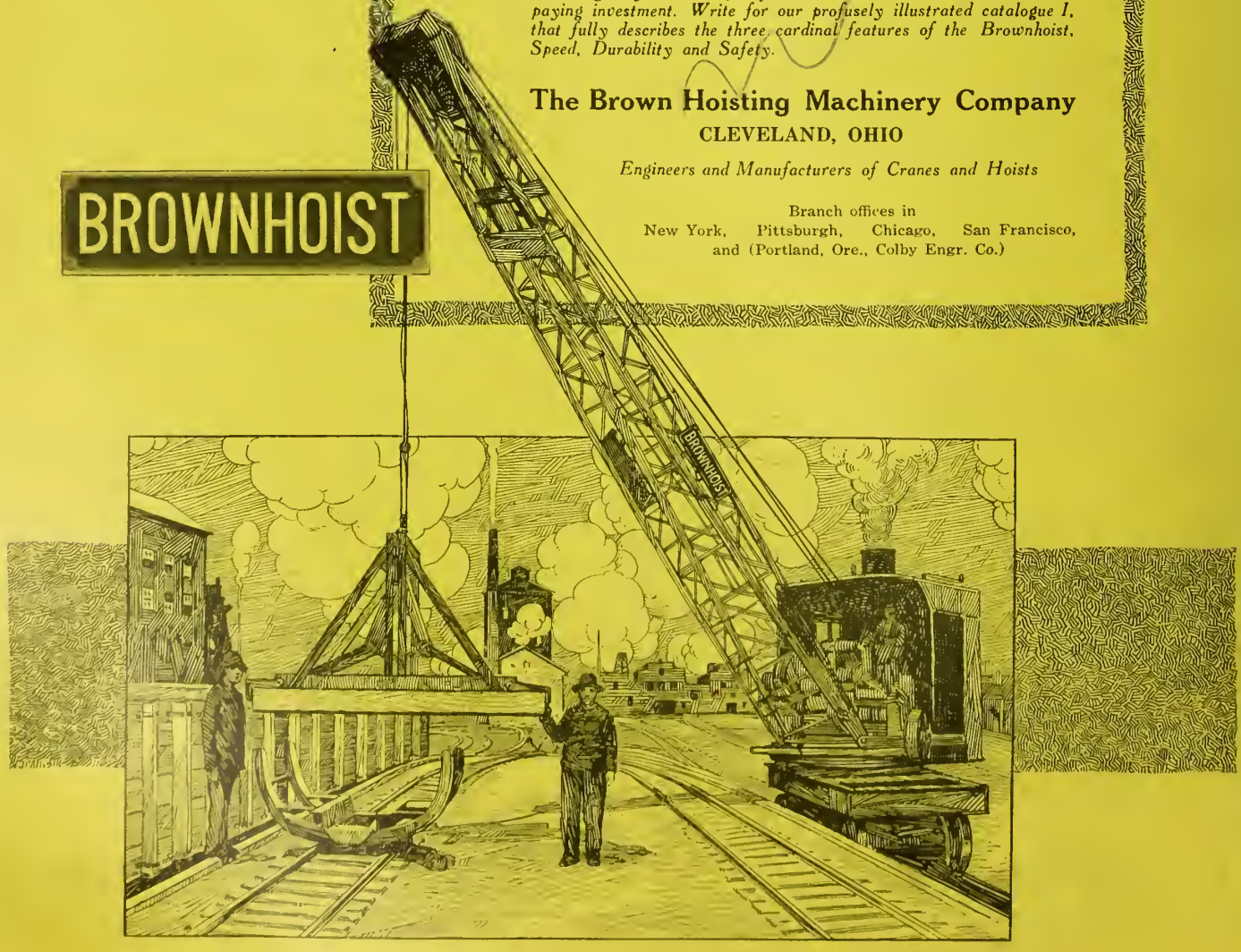
Let us give you actual proofs that a Brownhoist will be a dividend paying investment. Write for our profusely illustrated catalogue I, that fully describes the three cardinal features of the Brownhoist, Speed, Durability and Safety.

The Brown Hoisting Machinery Company
CLEVELAND, OHIO

Engineers and Manufacturers of Cranes and Hoists

Branch offices in
New York, Pittsburgh, Chicago, San Francisco,
and (Portland, Ore., Colby Engr. Co.)

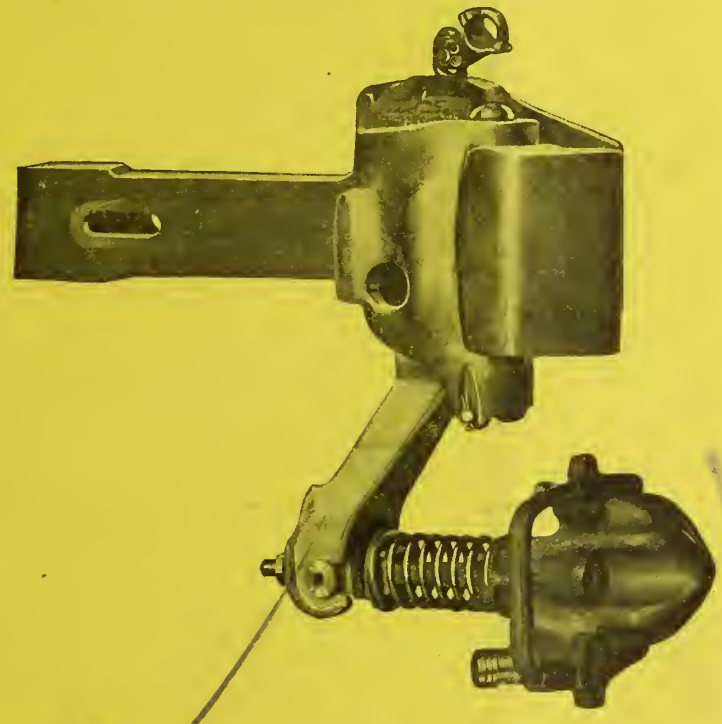
BROWNHOIST



Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 230 TORONTO, CANADA, APRIL, 1917 Subscription Rates, Page 147



The American Automatic Connector

Attached to Coupler

Automatically couples and uncouples the brake, steam, and signal pipe, requiring no attention whatever by the yard or train men.

Simple and efficient, it is far ahead of anything designed for the purpose and will save its cost, in the saving of the hose pipe alone, within a few years.

Has been in practical use for two and one-half years and has been thoroughly tried out under the most adverse track and climatic conditions to be found.

Write for particulars to,

B. J. Coghlin Co., Limited

Office and Works, Ontario St. East, Darling and Davidson Sts.

MONTREAL

Or, The American Automatic Connector Company,
Engineers Building, Cleveland, Ohio

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British Columbia Electric Railway—Locomotive and Train

Baldwin-Westinghouse Electric Locomotives

are successfully filling the passenger and freight requirements of many electric roads.—These locomotives have inherent advantages that make them valuable revenue builders.

They are the combined product of the Baldwin Locomotive Works; pioneer steam locomotive builders; the Westinghouse Air Brake Co.; pioneer air Brake Builders, and Canadian Westinghouse Co.; leading builders of electric railway motive power apparatus.

Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO, Traders Bank Bldg. MONTREAL, 52 Victoria Sq. OTTAWA, Ahearn & Soper, Ltd. HALIFAX, 105 Hollis St. FT.WILLIAM, Telfer Bldg.
WINNIPEG, 158 Portage Ave. E. CALGARY, Grain Exchange Bldg. VANCOUVER, Bank of Ottawa Bldg. EDMONTON, 211 McLeod Bldg.

Norton Jacks

For all Classes of Service

10 to 100 Tons Capacity

In Stock for Immediate Shipment.

Send for Illustrated Catalogue No. 29.

A. O. Norton, Limited

Coaticook, Prov. Que., Canada

Stock Carried by Canadian Agents: MUSSENS LIMITED
Montreal Toronto Winnipeg Cobalt Calgary Vancouver

What Would You Think of a Manufacturer——

who wrote to you with a stub pencil—"We are saving much money because we do not use typewriters and telephones."? You might well wonder whether his merchandise was as much out of date as his business methods.

You know that modern time and labor saving appliances are not added expenses, but that they have superseded slower and more costly processes.

The concern that uses your business paper to tell you its business story is simply making it easier for you to buy intelligently with the least waste of time on your part and theirs.

For the right kind of advertising shortens the distance between human minds just as certainly as the railroad has shortened the distance between places. It is still possible to walk from New York to Chicago, and it is still possible for a business to get along without advertising, BUT—

—don't forget that the seller who does not advertise, is not only paying for the results that such advertising would get him, but he is also *paying more than necessary.*

Progressive advertisers are progressive merchandisers and it pays to do business with them.

THE ASSOCIATED BUSINESS PAPERS, INC.

The International Association of Trade, Technical and Class Publications

ALL OF WHICH HAVE SUBSCRIBED TO THE "STANDARDS OF PRACTICE"

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Marine Engineering
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Textile World Journal
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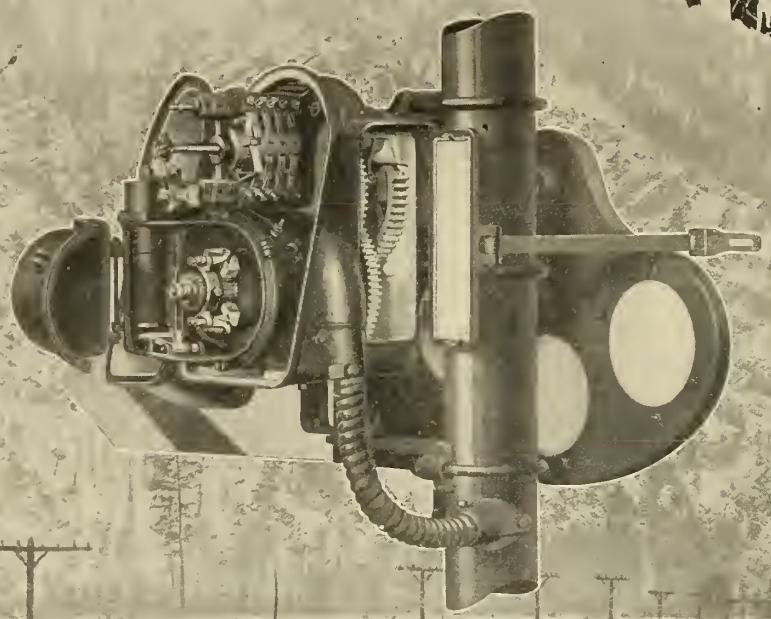
HEADQUARTERS: 220 West 42nd Street, NEW YORK CITY

Information concerning Business Papers cheerfully supplied.

COLD FACTS



On Railroading

Never before in the history of America have our railroads been required to meet the exacting requirements of the past year or more. Never has it been so absolutely necessary to transport safely and quickly large quantities of raw materials and merchandise and never before have the railroads of the country been so well prepared and so well equipped to handle this enormous volume of business. However, it is a fact, and existing conditions warrant the statement that the volume of business has exceeded the facilities for handling it expediously.

Facilities for the proper spacing of trains, eliminating train stops and delays thereby increasing the capacity of your road for handling traffic, and safeguarding that traffic against costly accidents is the most economical and reliable means of relieving traffic congestion. G. R. S. Automatic Block Signaling for Single or Double track lines will accomplish the desired result and prove a profitable investment.

"Safety First"

GENERAL RAILWAY SIGNAL COMPANY
OF CANADA LIMITED

Office and Works, Lachine, Quebec — Branch Office, Winnipeg, Manitoba

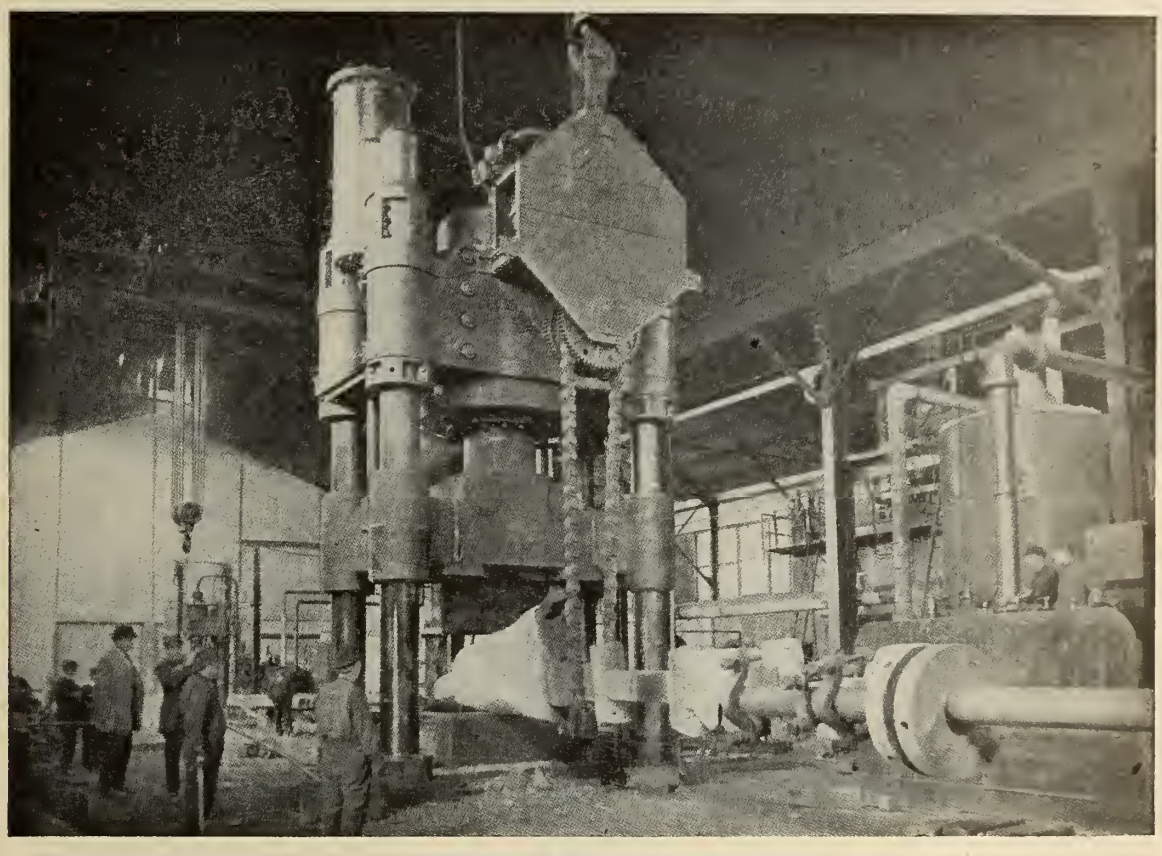
9186

Nova Scotia Steel & Coal Company

LIMITED

Manufacturers of Steel for Shrapnel Shells and Admiralty Forgings | Only Company in Canada producing Steel Ingots by the "Harmet" liquid process

Can supply Forgings up to 40 Tons in weight to all Admiralty and Lloyd's Tests and Specifications



FORGING A RUDDER FRAME

Why "Harmet" Liquid Process Steel Ingots are Superior to Ordinary Steel Ingots:—

1. Prevention of cracks due to shrinkage; of internal stresses and resulting cracks and fissures.
2. Early cessation in the crystallization of the metal, and the production of fine crystallization without cleavage planes.
3. Lessening of segregation, i.e., reduction of tendency of carbon and other impurities to concentrate in the central and upper parts of the ingot.
4. Prevention of "pipes" or interior cavities, and thus preservation of absolute solidity in the ingot.
5. Improvement in physical properties.
6. Reduction in waste of ingot.

OUR modern Steam Hydraulic Forge Shop at New Glasgow, N.S., part of which is shown above, and our large Steel Plant at Sydney Mines, N.S., equal the very best in America.

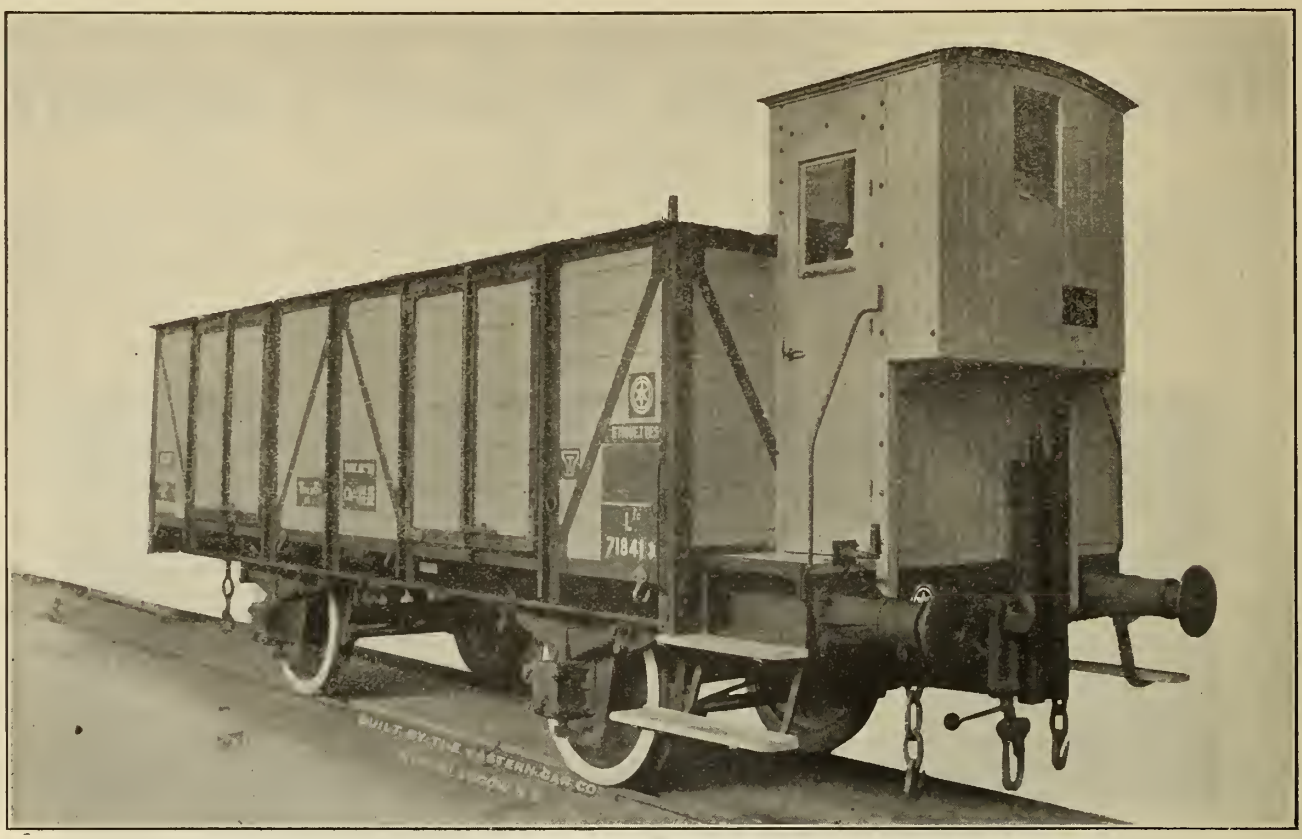
On the shortest notice, we can supply forgings of all shapes and sizes, made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods. It has always been the policy of "Scotia" to hold a position in the front rank of trade, and by the recent additions to plant, this policy has been maintained in a practical manner, bringing "Scotia's" equipment abreast of the best foreign forges.

For prices and full particulars, write to

Head Office, NEW GLASGOW, N.S.

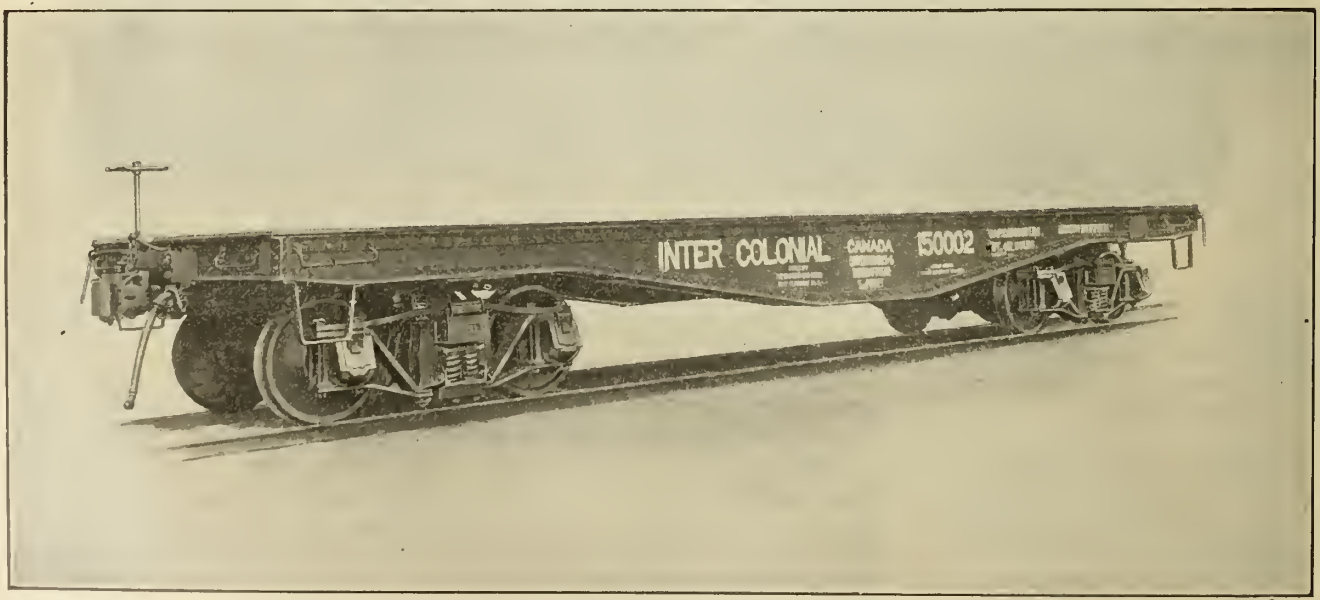
Western Sales Office, Room 14, Windsor Hotel, Montreal



ONE OF 2,000 GONDOLA CARS NOW UNDER CONSTRUCTION FOR THE FRENCH GOVERNMENT.

FREIGHT CARS TO FOREIGN ORDER

We have unexcelled water and rail shipping facilities for the export of freight cars of all types abroad or to United States markets. Our manufacturing capacity reaches to 40 cars per day. Although fully employed in filling and conducting negotiations for further foreign orders, our exceptional output facilities enable us both to take care of these and others in the order in which they are received.



75 TON SPECIAL PIT CAR FOR CANADIAN GOVERNMENT RAILWAYS.

FLAT CARS, CABOOSES, AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

Eastern Car Company, Limited

General Offices and Works, New Glasgow, N.S. Montreal Office, Room 14 Windsor Hotel

Brubaker Staybolt Tap

Special Temper Staybolt Tap

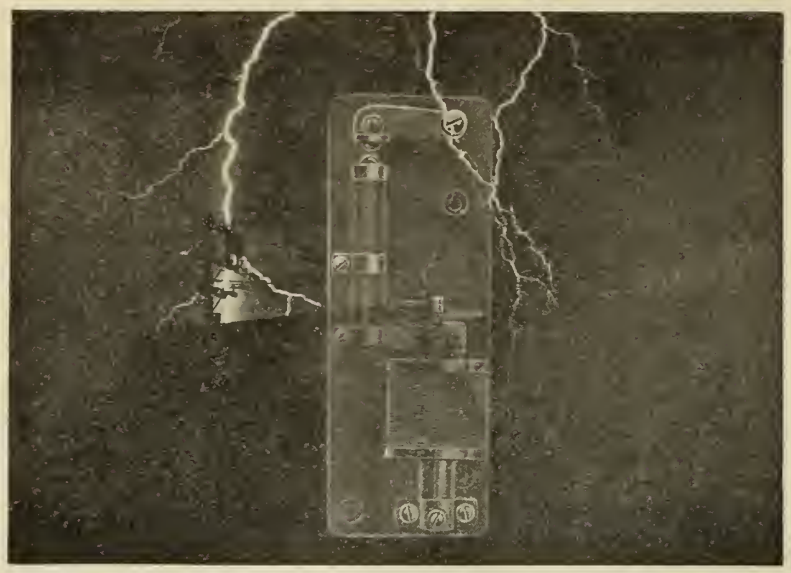
20% More holes per Tap Economy

Next Month We ***REAL***

Will Show You Some ***FIGURES***

Canuck Supply Co., Limited

Montreal Toronto Winnipeg Vancouver



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Now Is the Time!

No man has yet succeeded in getting full measure of protection from lightning arresters without careful and systematic inspection. Lightning arresters like every other piece of electric apparatus, need inspection.

And now is the time to inspect! Do this before the first storm hits you; get your lightning arresters in first-class shape; test their ground connection; bring your protective installation to its highest efficiency; *and be safe from lightning.*

The ease and certainty of testing

Garton-Daniels Lightning Arresters

has always appealed to the operating man; for railway arresters, just stick the point of a pencil or screw driver momentarily in the air gap and "watch the plunger." Watch it "pop" if both arrester and ground are in good condition; note its sluggish action if your ground is not up to standard.

A sure test; a positive test; a reliable test.

Can you do this with any arrester other than the Garton-Daniels? Can you *see* any other arrester operate? With any other arrester can you *see* whether both arrester and ground are in good condition by so simple a test?

No book that we know of contains more valuable information about inspecting and testing lightning arresters than our bulletin No. 4 on this subject, a copy of which will be sent you upon your request. And when you write for copy, tell us your requirements for 1917; we'll be glad to quote you and furnish full information without obligating you in any way.

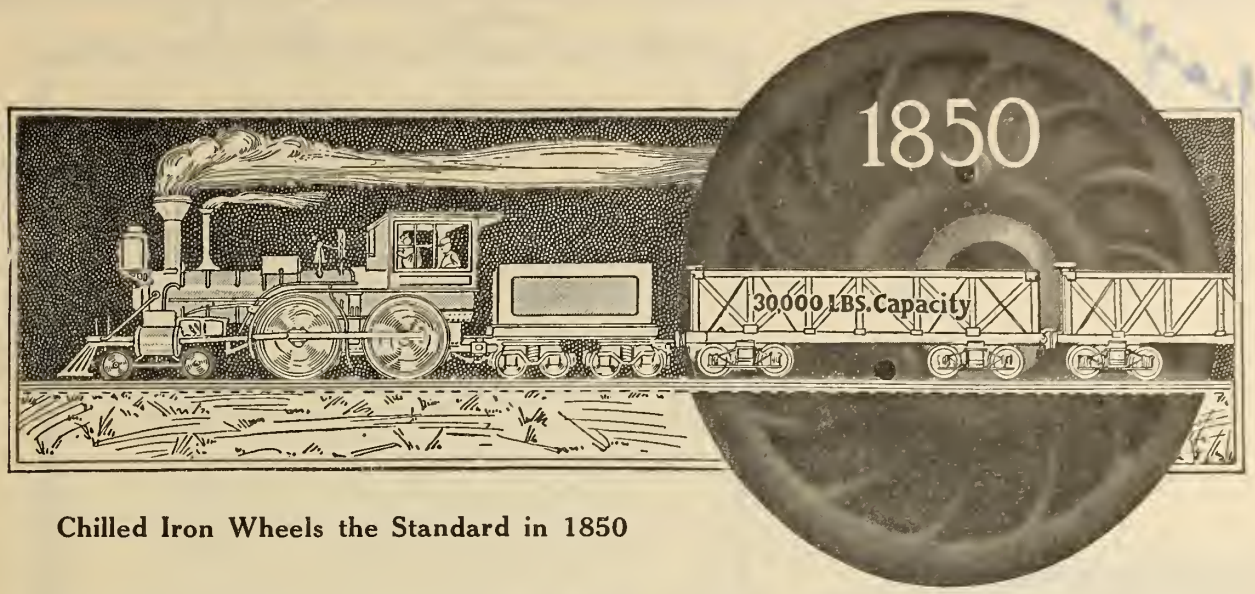
Tackle this matter while you yet have time; be prepared for the lightning season—*and be safe.*

Electric Service Supplies Co.

PHILADELPHIA NEW YORK CHICAGO
17th and Cambria Sts. 50 Church St. Monadnock Bldg.

Lyman Tube & Supply Co., Ltd.

MONTREAL TORONTO
323 St. James St. 33 Melinda St.



Chilled Iron Wheels the Standard in 1850

The Wonderful Single Service Chilled Iron Wheel

Considered from a chemical, physical and metallurgical standpoint, the Chilled Iron Wheel possesses certain inherent properties which are not found in other metals.

The higher combined carbon in the tread or running surface of the wheel produces the hardness which is so necessary for a maximum wear and the chilled treads will not crush or flow under the heaviest traffic pressure.

The plates are soft with an open fracture which enables the wheel to resist temperature stresses due to brake application.

The hubs are soft, which insures a strong and perfect axle fit.

These conditions are ideal for service and there is no other metal that possesses this graded hardness of structure.

The single service, one-wear chilled iron wheel, because of its hardness, will give a greater mileage per unit of metal worn away than any other type of wheel.

25,000,000 now running.

Association of Manufacturers of Chilled Car Wheels

1228 McCormick Building, Chicago

Representing Forty-eight Wheel Foundries Throughout the United States and Canada. Capacity 20,000 Chilled Iron Wheels Per Day

Chilled Iron Wheels the Standard today

It Actually Earns $161.00 A Day For This Railroad

THIS is not an absurdity, but a fact; and here is how. In breaking scrap in the yards of a well managed eastern railroad, a Brownhoist equipped with a magnet is used, dropping an 8,000 lb. weight on the castings.

Previous to installing the Brownhoist large castings were not broken, as there was no economical way of doing it. Consequently large scrap castings were worth only $7.50 per ton.

By the aid of a Brownhoist, equipped as above described, all large scrap castings are broken, thereby having a value of $14.00 per ton in their broken state.

On this work, 26 tons of castings are broken in a ten hour day, at a cost as follows:

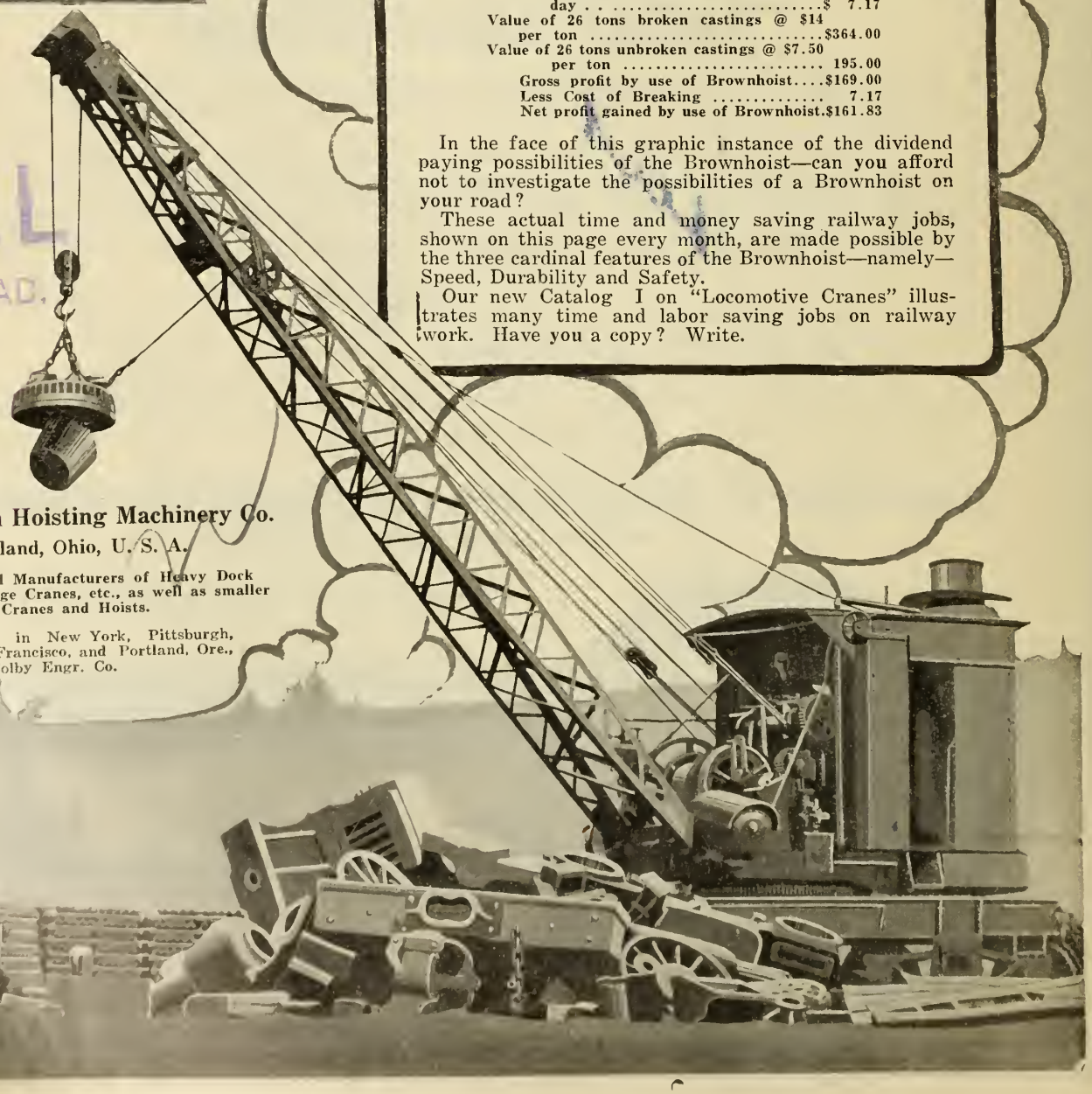
Engineer, 10 hrs. @ 34c per hr.	$ 3.40
Coal, ½-ton @ $1.25	.63
Valve Oil, 1 pt. @ $.477 per gal.	.63
Engine Oil, 1 qt. @ $.277 per gal.	.07
Miscellaneous Supplies	.10
Repairs, including general repairs	.91
Total for Crane	$ 5.17
One Helper @ 20c per hr.	2.00
Total Cost for Brownhoist per 10 hr. day	$ 7.17
Value of 26 tons broken castings @ $14 per ton	$364.00
Value of 26 tons unbroken castings @ $7.50 per ton	195.00
Gross profit by use of Brownhoist	$169.00
Less Cost of Breaking	7.17
Net profit gained by use of Brownhoist	$161.83

In the face of this graphic instance of the dividend paying possibilities of the Brownhoist—can you afford not to investigate the possibilities of a Brownhoist on your road?

These actual time and money saving railway jobs, shown on this page every month, are made possible by the three cardinal features of the Brownhoist—namely—Speed, Durability and Safety.

Our new Catalog I on "Locomotive Cranes" illustrates many time and labor saving jobs on railway work. Have you a copy? Write.

BROWNHOIST



The Brown Hoisting Machinery Co.

Cleveland, Ohio, U. S. A.

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller Cranes and Hoists.

Branch Offices in New York, Pittsburgh, Chicago, San Francisco, and Portland, Ore., Colby Engr. Co.

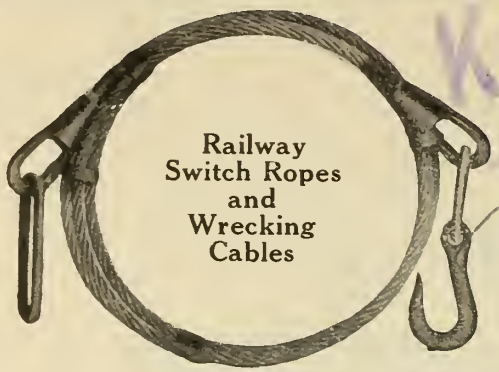
Quality

THE leader in every industry, to maintain his lead, must safeguard the quality of his products.—Rigid inspection and careful supervision are important factors. —To products of iron and steel this principle applies with tremendous force.—It means safety, security and stability.—We safeguard the quality of our products, believing quality will be recognized long after the price is forgotten.

Service

OUR customers must be served. One of the dominating factors in any successful business is Service. —We succeed only through the good will and good wish of the people we serve.—This thought permeates our entire Organization, from the President down.—Our employees feel the sense of responsibillty this principle implies; and each one directs his efforts to maintain the high standard of service we aim to render.

THE
STEEL COMPANY
OF
CANADA
LIMITED
HAMILTON - - MONTREAL



SAFETY FIRST

Use

"DOMINION" Wire Rope

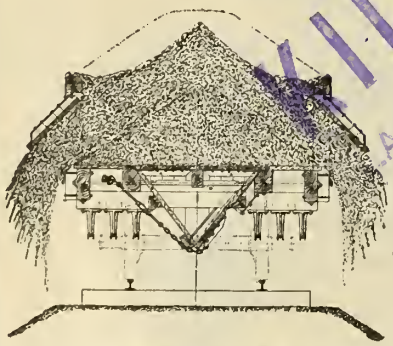
Tough—Strong—Durable

The DOMINION WIRE ROPE Co., Limited

Montreal Winnipeg Toronto

Hart Convertible Cars

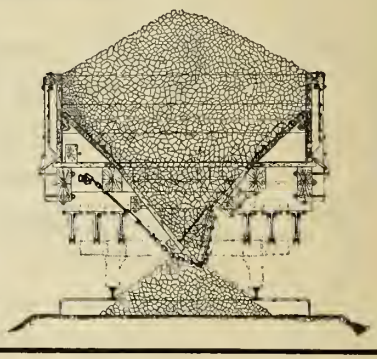
Are Money Savers in **Center** and **Side Dump** Ballast Work

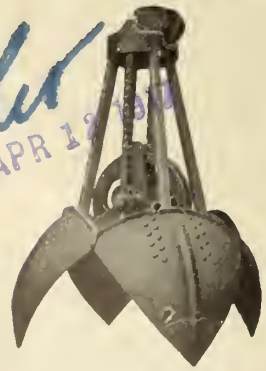


Three Cars in One { BALLAST CAR / CONSTRUCTION CAR / GONDOLA CAR

Use centre dump for ballast and maintenance work and save $200.00 per mile over any other method.
Use side dump for heavy construction work.

The **HART-OTIS CAR CO.** Limited
MONTREAL





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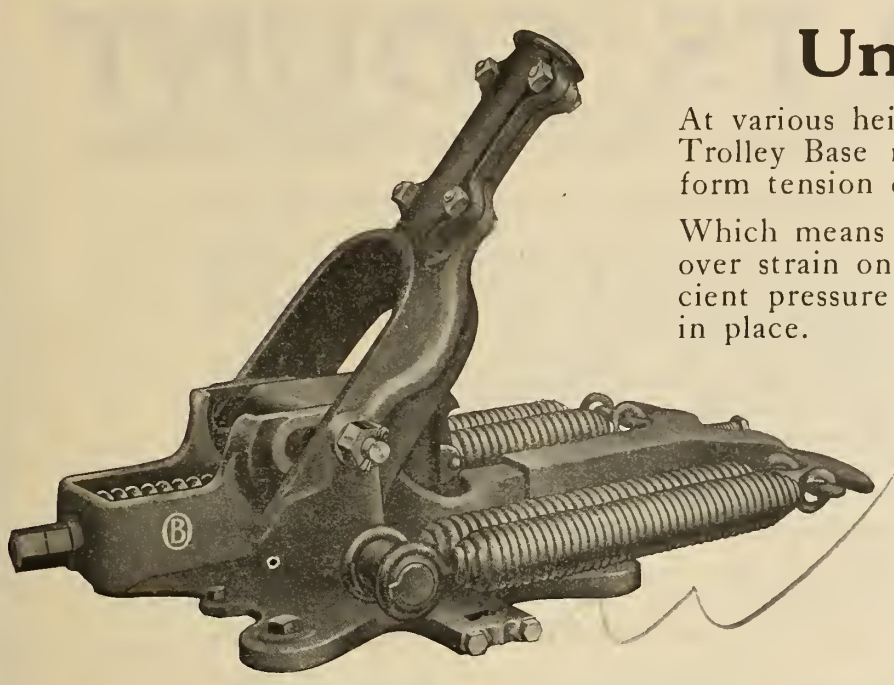

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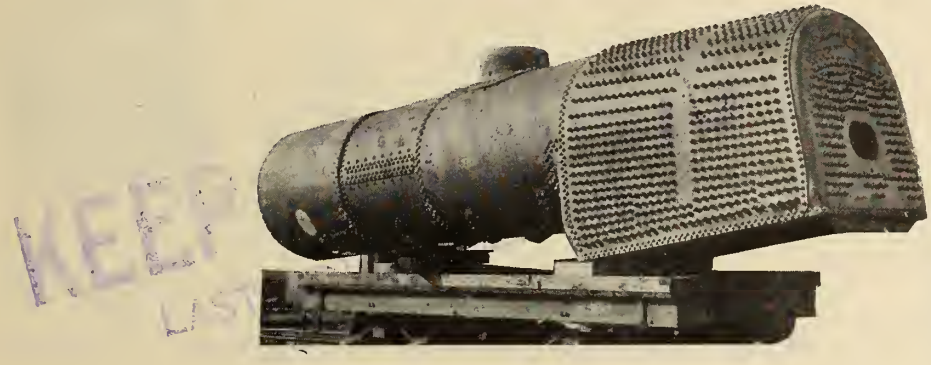

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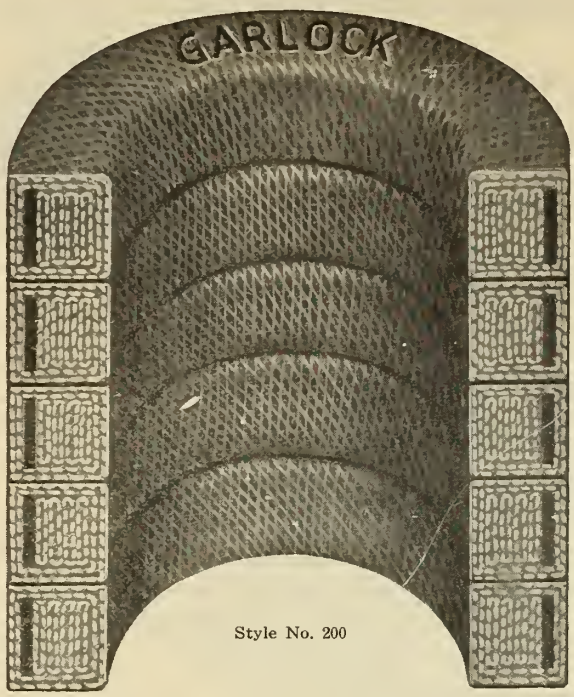

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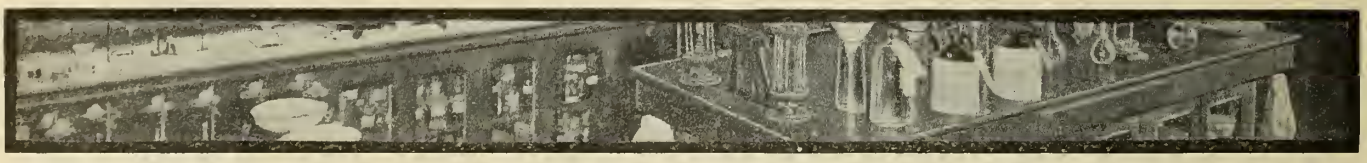

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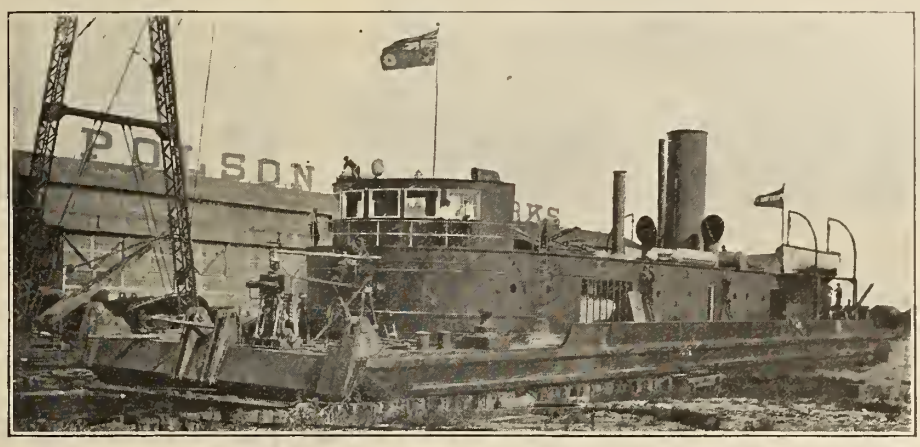

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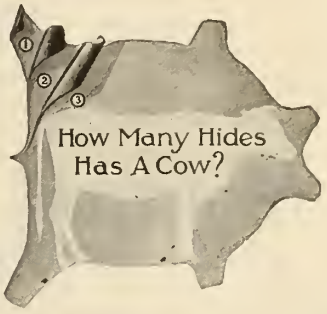

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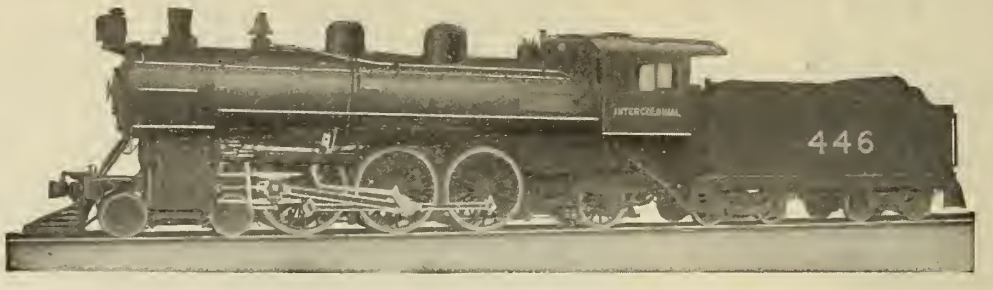

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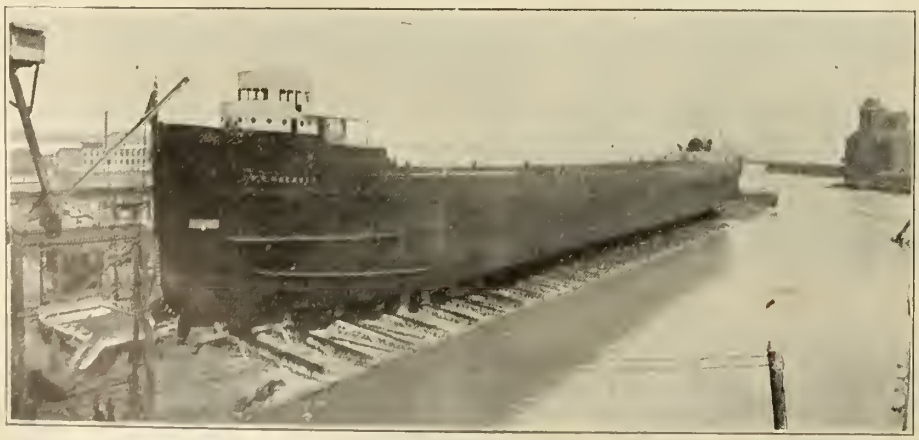

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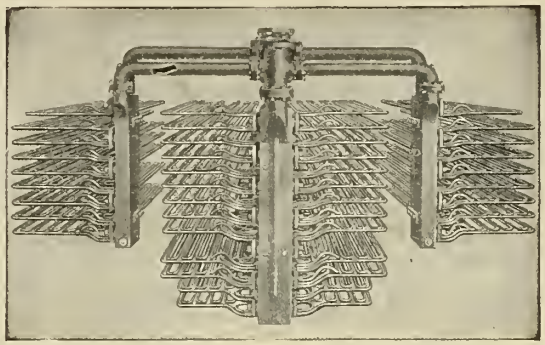

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Canadian Railway and Marine World

April, 1917.

The Engineers' Work at the Front in the War.

[The following article, compiled from information obtained from Canadian Engineers' officers, who have been at the front in Belgium and France, some of them having gone over with the Canadian Expeditionary Force's first contingent, will undoubtedly prove of considerable interest to a large number of Canadian Railway and Marine World readers, as many of the Canadian Engineers —officers, non-commissioned officers and sappers — were engaged previously in railway construction, maintenance, and mechanical and electrical work.—Editor.]

One of the trench descriptions of an engineer is: "One who always does his best; always finds still more work for the infantry to do; and often thinks he can make water run up hill." This no doubt originated from the perspective the infantry and other combatant units get of the engineers' work. They realize that most of the engineers' work is for their protection and their comfort, and they therefore have a kindly feeling towards him, and concede that he is one who always does his best. This kindly feeling is tempered somewhat, however, by a feeling of exasperation, because the infantry are so often called upon to supply working parties to carry on various forms of engineering work. As is well known, engineering work in France is carried on by working parties drawn from the infantry, the pioneers and other units, each sapper (a private in the engineers) laying out, supervising, and helping the work of a working party of from 50 to 150 men. It therefore appears to the infantry as if the engineers were always finding still more work for them to do.

Men in the trenches are always conscious of water, mud or slush, depending upon the season of the year. The engineers always try to sight the trenches so as to get natural drainage to the front or rear, that is through the parapet, or through the parados, but this is not always possible. Sometimes the enemy objects, and makes certain positions so unhealthy that the engineers are forced to compromise in the position for the trench. At other times the nature of the ground along the ideal sighting for the trench is such that it is impossible to dig. For instance, the Somme battle fields have been ploughed up repeatedly by shell fire, and the ground is a mixture of mud, remains of wire entanglements, corrugated iron, steel beams, shells and other materials destroyed by our own or the enemy shell fire. Therefore a trench is often sighted, by necessity, where drainage is very difficult, and no wonder the infantry sometimes think the engineer counts on the water running up hill.

As in other branches of the service, the methods of carrying on engineers' work in France have been materially altered since the opening months of the war, first by the settling down to trench warfare, and second by the immense amount of engineer work necessitated by the style of warfare. In the original British Expeditionary Force the Royal Engineers were divided into two classes: 1st, Divisional engineers, under which was allotted for each division 2 field companies, and 1 signal company. 2nd, Engineer units on lines of communication, comprising fortress companies, works company, railway company, signal companies, and printing company.

The works company was split up into sections, one being at each base. Assisted by French civilian labor contractors and by working parties from any infantry available, they erected base camps and looked after all work in connection with them, such as water supply, drainage, lighting, sanitary arrangements, road making, etc. They had to provide store accommodation for the large quantity of supplies and ordnance stores as they arrived. At present the function of these works companies is the maintenance and upkeep of all the base camps, and the work is very similar to the works department of any large city, with all luxuries eliminated. The fortress companies did not come into active use until the operations on the Aisne, and from that time their work was essentially connected with that of the field companies. In the Royal Engineers, army troop companies have taken the place of these fortress companies and are at the disposal of the chief engineers of the different corps, and their work is to assist the field companies in the construction of defensive lines.

Late in Aug. 1914, in the retreat from Mons, the field companies of Royal Engineers played the prescribed role of engineers in battle. They assisted the infantry in the preparation of defensive positions, and put special positions into a state of defence. They were kept very busy, collecting tools, such as spades, shovels, etc., from the neighboring districts. One test of a good engineer is his ability to "rustle" engineer materials and tools. Eight sections of field companies, each consisting of one subaltern, 20 sappers and a tool cart, were ordered to demolish the bridges over the Mons canal. Some of these were successfully demolished, while the Germans had possession of the others before the engineer section arrived.

Later on in the British advance, after the German defeat almost at the gates of Paris, the Royal Engineer field companies work changed, and they were engaged on engineer reconnaissance of roads, river crossings, demolished bridges, etc.; and at the River Aisne, five permanent bridges which had been demolished were at once made passable for infantry in single file and later repaired to take mechanical transport. Some idea of the work and material involved can be gathered from the fact that to make a satisfactory approach to one of the bridges over the Aisne, a road, about 200 yards long, had to be made. This necessitated collecting brushwood for the construction of over 2,000 facines, their transport to the site of the bridge, and the collection of all available road metal in the neighborhood.

In his book, The British Campaign in France and Flanders, Sir Arthur Conan Doyle pays a marked tribute to the Royal Engineers as follows:—"The more one considers the operations of the line of the Aisne, with the battle which followed it, the more one is impressed by the extraordinary difficulty of the task, the swift debonair way in which it was tackled, and the pushful audacity of the various commanders in gaining a foothold upon the farther side. Consider that upon Sept. 12, 1914, the army was faced by a deep, broad, unfordable river, with only one practicable bridge in 15 miles opposite them. They had a formidable enemy, armed with powerful artillery, standing on the defensive upon a line of uplands commanding every crossing and approach, while the valley was so broad that ordinary guns upon the corresponding uplands could have no effect, and good positions lower down were hard to find. There was the problem. And yet upon Sept. 14 the bulk of the army was across and had established itself in positions from which it could never afterwards be driven. All arms must have worked well to bring about such a result, but what can be said of the Royal Engineers, who built under heavy fire, in that brief space, nine bridges, some of them capable of taking heavy traffic, while they restored five of the bridges which the enemy had destroyed! Sept. 13 should be recorded in their annals as a marvellous example of personal self sacrifice and technical efficiency."

After this the campaign settled down to trench warfare, which the Canadian army had to handle when it arrived on the scene, and the Canadian Engineers have had experience only with trench warfare. There are now four Canadian divisions in France. The Canadian Engineer organization for this army is made up as follows: The Chief Engineer, Canadian corps, is a Brigadier-General. He has under him the four colonels in command of the four units of divisional engineers, each consisting of one divisional engineer headquarters, and three field companies. He also has directly under him all corps troop companies, and independent engineer officers attached to his staff, who do the miscellaneous engineer work required behind the general headquarters lines. Corps troop companies and the engineer officers attached to the Chief Engineer's staff, look after the installation of water supplies for all units billeted behind general headquarters lines; look after the construction of g. h. q. lines, construction of strong points between g.h.q. lines and subsidiary lines; special railway construction immediately behind g.h.q. lines for the use of the artillery; construction of all roads in the corps area up to the g.h.q. lines, and all main roads from there forward to the most advanced point of motor transport; also construction of artillery route roads, both highway and railway, for supplying the heavy artillery with ammunition.

The C. R. E., or colonel of divisional engineers, has at his command divisional engineer headquarters, three field companies, the ordering of the work of one pioneer battalion and one tunnel com-

pany. He usually attaches one field company to each infantry brigade to aid them in carrying out the work in their area. The work in their area consists of the maintenance of the front line; communications to the support line; the support line; communications to the subsidiary line; and all strong points between the subsidiary line and the support line. In some instances they are given the maintenance of the subsidiary line to look after. The working parties for this work are supplied by the brigade in the line and are directed by the field company attached to the brigade, and in addition, this field company looks after the construction of all new lines in front of the subsidiary line, which may or may not be built by working parties supplied by the brigade; the construction of the subsidiary line, which is usually constructed by the troops supplied by the division; the construction of strong points immediately behind the subsidiary line by working parties supplied by the division; the digging of wells in the brigade's billeting area; the construction of roads in the brigade area which are not main roads looked after by corps, and the construction of huts for billeting reserve battalions of brigade; construction of routes for the use of working parties in dry weather; and all the innumerable drainage schemes required in the rear brigade area, also the construction of light railways in the brigade area. At the same time, a considerable portion of the personnel of this company may be working under the C. R. E. for construction of such things as divisional bath houses, Y. M. C. A. recreation huts, etc.

The C. R. E. usually splits up his pioneer battalion by keeping one company to work directly under his own orders, and attaching each of the other three companies to a brigade, to work under the orders of the respective field companies. The tunnelling company works directly under the C. R. E.'s orders, and is supplied with material and working parties by the field company in whose brigade area the tunnelling company may be operating. The C. R. E., for the construction and maintenance of the works looked after by him, also gets working parties from corps troops, such as battalions in corps reserve, dismounted cavalry, and any other units that may be at the disposal of corps and lent to division.

Some of the best engineers in Canada prior to the war are now in France with the Canadian Engineers. It is claimed that at least 40% of the men in the ranks of the Canadian Engineer companies attached to the first Canadian contingent were graduates of engineering colleges; and practically all were high class men. The result was that the Canadian Engineers made a name for themselves in France; and they obtained a status in the army worthy of the corps.

As was the Royal Engineers, the working party idea was developed in the Canadian army, because of the immense amount of engineering work necessary; and the sapper in the Canadian Engineer field compaies became in reality a foreman of working parties, carrying on the various forms of engineering work at the front, of which trench construction and trench consolidation constituted a very important part. Some of the Canadian Engineer officers have developed the "task" idea, in connection with working parties, to the decided advantage of the work to be done, and the men in the working party. Returned sappers have told of the effectiveness of having a specified amount of work to be done by each member of a working party, with instructions that the working party goes "home" when work is completed. Usually a working party with a "task,' 'will finish an equal or greater amount of work, and be in billets and asleep, while a working party without set tasks for each would still be on the job.

As has been before stated, the obtaining of engineering equipment and materials has always been one of the big problems of the engineers. When an army is on the march, the engineer field companies are dependent upon the districts through which they pass for materials, with the exception of course of certain materials, equipment and tools carried by each field company. In trench warfare there is nothing left but mud, and all materials for trench construction, splinter proof construction, bomb proofs, etc., is brought up from the rear, first by motor or horse transport, and then by carrying parties to the point where the work is being done. This has led to the establishment of engineer parks in the rear, where all forms of standard engineering material are made up, including frames for splinter proofs, bomb proofs, trench revetting, etc., and forms of wire entanglement, etc. All kinds of tradesmen and mechanics are needed in these parks for the manufacture of these standard forms and materials, and the work is carried on by working parties of sappers' mates, the work being supervised by sappers from engineer companies. There are also hutting parties, consisting of carpenters, drawn from other units, attached to engineer companies, who construct, under sappers' direction, the huts which form the infantry's reserve billets. Brigade wiring parties, consisting of volunteers from the infantry, attached to engineer companies, are taken back and live at the engineer billets, and are trained to do wire entanglement work; and when proficient put out the wire under their own officers, but directed by the engineers.

An idea of the status of the Canadian Engineers in France can be had from the fact that no one in the Canadian army can get one stick of material unless it is sanctioned by the engineers, that is the Canadian Engineers are called upon to pass judgment upon any and all construction work, and this absolute control of material by the engineers gives them a status with all troops in France. The general staff does not make a move without efficient engineer advice. This is true all the way down. The captain of an engineer company is continually consulting with the brigadier-general of the brigade as to the work that it is possible to carry out with the men and material available. The engineer subaltern is present at the conferences, composed of the brigadier-general, the engineer major or captain, and the four colonels of the brigade, at which decisions are made as to the programme of work for the next relief. The engineer subaltern, with his section of sappers, usually looks after all construction work in one battalion front; so that he, after having been present at the brigade conference, settles all minor details about the work in that sector, with the colonel of the battalion in charge of the sector. He then has the working parties turned over to his sappers. An engineer n.c.o. will have charge of four or five working parties, and each party will be in charge of a sapper.

When the Canadians moved into the Ypres salient in April, 1915, they took over trenches from the French Iron Division, which were anything but what they had been taught to expect trenches would be. There were little sections of disconnected trench forming this front, which were made by throwing up a little dirt against the backs of hedges and were not even bullet proof. There was no daylight communication between these sections and no daylight communication to the rear. The problem that confronted the Canadians was whether it would be better to make a proper front line first, or to develop communications to the rear, and strong subsidiary line defences. They decided, on the advice of the engineers, that the first thing required was to make the front line fightable. To do this the engineers jumped in and kept large working parties working night and day on the construction of a properly traversed front line.

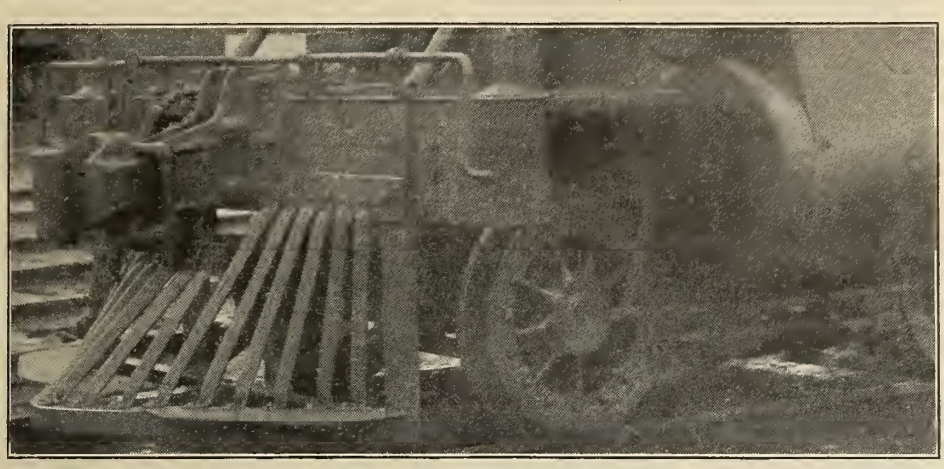
In one section of this front, held alternately by the 7th and 8th battalions, there was a particularly bad piece of trench, enfiladed by German artillery fire, which connected the line to a very important little knoll. One engineer subaltern impressed on the colonels of these relieving battalions that that piece of line should be immediately put in good shape. He urged on them almost day and night to get the maximum number of men available working on this piece of line. It was a disagreeable piece to work in, because the French had believed in the theory of making no move during the daylight hours, and they had buried their dead side by side in the bottom of this trench, and covered them about a foot deep with earth. To improve the trench it was necessary to dig through these bodies and construct a heavy parapet and put in large traverses. The work was extremely disagreeable for the infantry working parties, who would only be there for a six hour stretch, but it was still more disagreeable for the engineers, who were there all the time. In a few nights this section of trench was completed, and none too soon, as the big German gas attack was then launched. This piece of trench held, and one of the colonels, now a major-general, after the second battle of Ypres, told this engineer officer that his obstinancy in insisting on getting the large working parties, and keeping the infantry at it day and night, in getting that section of trench completed, had saved practically a company of the battalion from annihilation. That engineer officer, in dealing with these large working parties, could not have been successful in the accomplishment of this work, if he had not been backed up by a very high class of sappers on whom he could depend individually to handle from 50 to 100 men efficiently and well, under most trying conditions. This is an example of where the high class of personnel among sappers may mean the difference between holding a line and failing to hold it.

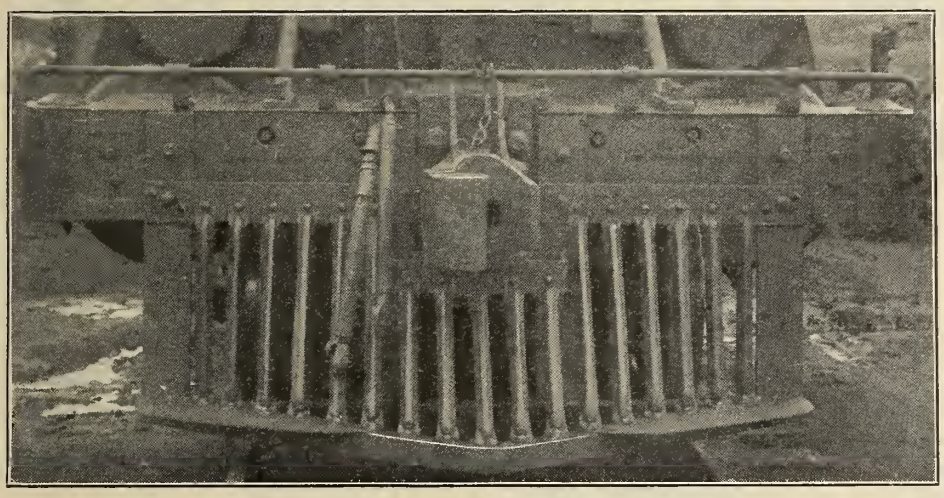
Electrification of the Lehigh Valley Rd. is said to be under consideration, and engineers are reported to be making surveys and investigations preparatory to rendering a report upon the project. The L.V.R. carries a very heavy coal traffic from the anthracite region to tidewater, and all trains have to climb over a high summit in passing west from Wilkes-Barre. It is stated that the plans for electrification comprehend the entire main line from Jersey City to Wilkes-Barre.

American Association of Dining Car Superintendents.—E. W. Smith, Superintendent, Dining and Parlor Car Service, G.T.R., Toronto, and S. Wertheim, Superintendent, Sleeping, Dining and Parlor Cars, District 2, C.P.R., Toronto, have been elected chairman and secretary, respectively, of the association's Canadian territorial committee.

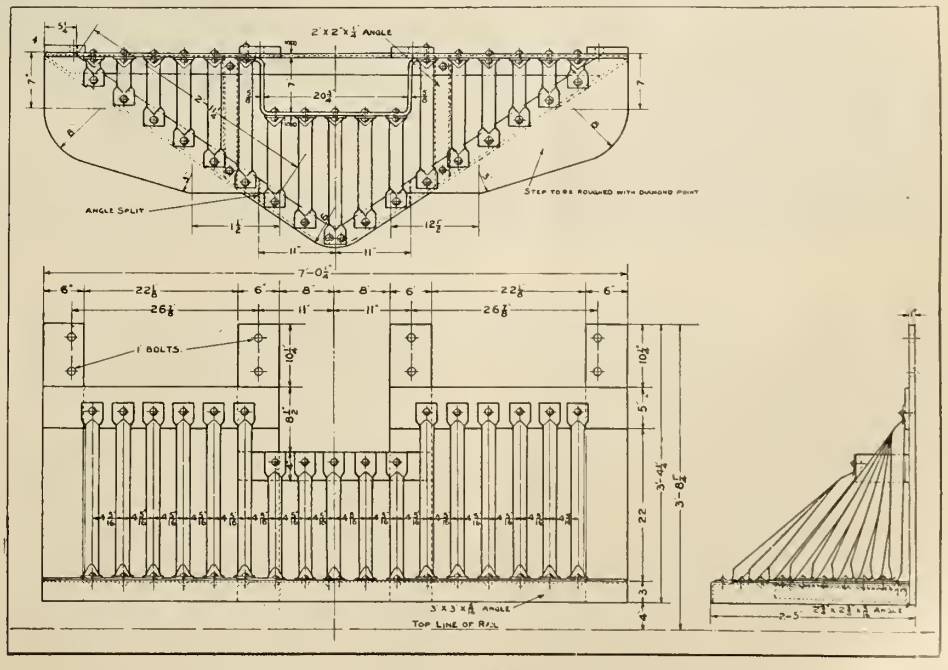
Standard Steel Pilot for Canadian Pacific Locomotives.

The accompanying illustrations show a standard steel pilot applied to a C.P.R. Pacific type passenger locomotive, which is simple, but strong and inexpensive to manufacture and apply, giving a very neat, substantial appearance. The bars are made of old boiler tubes, which are put through a set of rollers and rolled into triangular shape, so that they resemble the ordinary slat used with a wooden pilot. The rolling is done cold. The bars are flattened and bent at each end to the proper angle to suit their location in the pilot. They are fastened to the pilot frame and nosing by ½ in. rivets. The nosing is made of 3 in. x 3 in. x 5/16 in. angle, and the frame of flat steel bars.





Pilot on Pacific Type Passenger Locomotive, C.P. R.



Details of Pilot on Pacific Type Passenger Locom otive, C.P.R.

Commission of Enquiry Into Railway Situation.

On motion of Sir Wilfred Laurier, the House of Commons, on Jan. 31, ordered a return of copies of all correspondence respecting the appointment of a commission to investigate the financial and economic condition of Canadian railways, showing the names of the commissioners and the rate of their remuneration, along with the names of the secretaries and engineers appointed by them or by the commission, and the rate of their remuneration.

On Feb. 6 the Minister of Railways presented to the House, a return containing a copy of order in council of July 13, 1916, appointing A. H. Smith, Sir Henry Drayton and Sir George Paish, as commissioners, also copy of order in council Oct. 21, 1916, appointing W. M. Acworth, in place of Sir George Paish resigned. The return also contained a copy of a memorandum issued by the Prime Minister in Sept., 1916, making public a letter written him by Sir Henry Drayton on Sept. 19, 1916, and also a letter from the Canadian Society of Civil Engineers council, written on Sept. 7, protesting against the employment of aliens by the commission. All of the documents mentioned were published in Canadian Railway and Marine World from time to time. The return did not contain any information as to the commissioners' remuneration or the names of the persons employed by them and the remuneration paid such persons.

C.P.R. Scholarships at McGill University.

George Bury, Vice President, C.P.R., has issued the following circular:—Three free scholarships, covering four years tuition in chemistry, civil, mechanical or electrical engineering at McGill University, are offered, subject to competitive examination, to apprentices and other employes enrolled on the company's permanent staff and under 21 years of age, and to minor sons of employes. The competitive examination, which will be the regular entrance matriculation examination provided for in the University's annual calendar, will be held at the University, Montreal, and at other centres throughout Canada, in June. The candidates making the highest average and complying with the requirements of admission will be awarded the scholarships and have the option of taking any of the above courses. Scholarship will be renewed from year to year, to cover a period not exceeding four years, if, at the close of each session, the holder thereof is entitled, under the rules, to full standing in the next higher year. In case a scholarship holder finds it necessary to interrupt his course for a year or more, notice must be given at the close of the session to the company and to the Dean of the Faculty of Applied Science of the University, in order that the scholarship may be open to other applicants. In order to establish prior claim to the next available scholarship, notice of the students' intended return must be given to the company to the Dean not later than Jan. 1 preceding the opening of the session in which such scholarship will be available. Applications for certificates entitling eligible persons to enter the competition should be addressed to C. H. Buell, Staff Registrar and Secretary.

Pension Department, Montreal. Copies of the annual calendar containing the conditions of admission and announcement of courses may be obtained upon application to the Registrar, McGill University, Montreal.

Electrically Heated Solder Pan in C.P.R. Shops.

The pan shown in the accompanying illustration is used at the C.P.R. shops at Fort William, Ont., and Vancouver, B.C., for soldering end rings and bars on rotors for induction motors when they are being rewound. The heating plate is made of ⅛ in. iron, 27 in. in diameter, covered with a sheet of ¼ in. asbestos of the same diameter. The asbestos is fastened to the iron plate by porcelain cleats, which are bolted to the plate with flat head stove bolts. The heating element is a coil containing 110 ft. of no. 18 nicrome wire, connected on a 250 volt circuit using 12 amperes. The coil is formed on ¼ in. pipe.

Fig. 1 shows the method of placing the

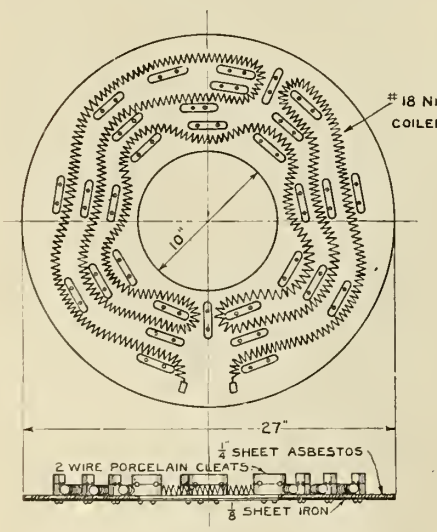


Figure 1.

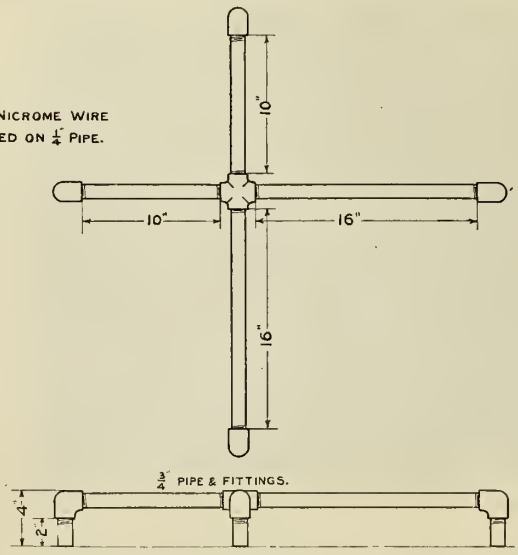


Figure 2.

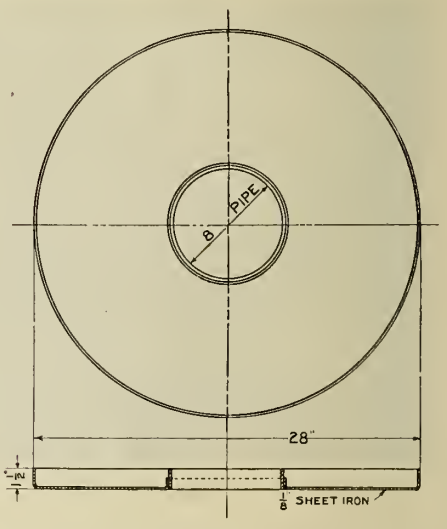


Figure 3.

Electrically Heated Solder Pan in Canadian Pacific Railway Shops.

cleats and laying the coil to make the heating element. Fig. 2 shows an iron pipe stand, on which the heater and pan rest. It is made of ¾ in. iron pipe and measurements are arranged so that the centre cross is placed about 4 in. off the centre, allowing plenty of room for movement of the rotor shaft while being soldered.

The solder pan, fig. 3, is 28 in. in diameter, made of ⅛ in. iron plate, flanged at the outside to a height of 1½ in. The centre is cut out, flanged up to a suitable height, and threaded for a piece of 8 in. iron pipe, which forms an inside flange 1½ in. high. The pan is nearly filled with solder, and can be heated to the required temperature in about 15 or 20 minutes. The rotor to be soldered is suspended with a chain block, and lowered end down into the molten metal. When well heated, and the loose solder brushed off, it is reversed, and the opposite end treated in the same manner. By this method rotors can be soldered in 30 minutes, including the heating of metal, whereas from 18 to 24 hours were required to accomplish the same purpose with gasoline torch and soldering iron. We are indebted for this information to J. McLaughlin, formerly Resident Electrician, C.P.R., Fort William, now Electrician, C.P.R., Vancouver.

The Proposed Toronto Water Front Viaduct.

W. H. Breithaupt, M.Inst.C.E., M.Can. Soc.C.E., wrote the Toronto Globe recently, as follows: You revert to the main harbor front railway and street grades separation question, now a question of venerable age. Incidentally you again, indirectly, imply doubt of the honesty of motive of the railways, a distrust if one may suggest, that has all along been a deterrent to arriving at a mutually advantageous solution.

Many reasons can be advanced why the adopted solution of this question of foremost importance may not be the best one. The railways occupy a comparatively narrow strip of ground along or near the water front. Directly back of it is the higher ground of the city, with Front St. the paralleling street, all along higher than the railways, and from Yonge St. westward very materially higher. This natural advantage in difference of elevation, which could be enhanced by sinking railway tracks somewhat, is such that with rational clearance, bridges could cross the railways to the water front at all important, if not at practically all, streets. The adopted plan ignores this advantage. Relief, together with immediate use of the new station, which by the track elevation plan is not in sight for the next four years at least, could be had at once.

I hesitate to criticize the adopted plan, but it is gravely to be doubted whether the proposed new 230 ft. right of way for railway embankment, across the present harbor front from Yonge St. east, will be required, what with development of railway facilities, Yonge St. passenger station, etc., north, and with certain future use, though barred for the present by construction cost, of electric traction with its enlarged facility of work on given trackage. Other lake cities, such as Cleveland and Chicago, sink their lake front tracks as much as practicable; here we propose to make them unduly conspicuous, on earth embankments. It may be argued that the cases of these cities are different. They are, somewhat. No two cases are wholly alike.

The right solution of any problem, engineering or other, is arrived at only by giving due weight to all conditions that have bearing on it. For one thing, the enormous cost of railway properties in Canada, a cost very much greater than necessary, even for the existing mileage, is becoming more and more evident. For this cost the people must pay, whether indirectly in taxes or directly in charges for use. Why should useless cost be forced in any detail? Is not a submission of this vital grade separation problem to absolute engineering solution, on the best authority available, without hamper of possible preconceived notion of Board of Trade, Harbor Board, city, railways or any other body, of what the solution should be, still in order?

New Zealand Government Railways Unsatisfactory.

Sydney Smith has written from Rotorno, N.Z., to the Financial Post, as follows: "If you want a convincing argument against state ownership of railways investigate the Australian and New Zealand railways. I have travelled in the five continents and have never experienced a worse rail service than in New Zealand or a more costly service to travel or freight on; freights and passages are of the highest, the service is of the worst, and the employes the most casual. The express between the capital city, Wellington, and the largest city, Auckland, averages just over 20 miles an hour, the trains are filthy, and porters are practically unobtainable. When one thinks of your magnificent C.P.R. and all that it has done for Canada's service, one is impelled to write and call "cave" before you change. You will never improve it under state ownership and are fairly certain to destroy its efficiency.

The Institution of Civil Engineers' Council has invited any of the Canadian Society of Civil Engineers' members, who may be visiting England, to use the Institution's library and reading rooms in London, as well as attend its meetings. A letter of introduction from the Canadian Society of Civil Engineers will be necessary.

In France all express trains, with the exception of postal and long-distance trains, are ordered discontinued, as one of the steps taken to facilitate transport connected with national defence and commercial traffic.

C.P.R. Snow Fighting Equipment at Fort William.

The accompanying illustrations show how snow was handled in Fort William terminals during the past winter.

Fig. 1 shows snow plough and spreader, which means a plough on both ends, and no time is lost in ploughing in either direction, or winging.

Fig. 2 shows a champion ice cutter, which clears out all the ice from between the rails, no matter how hard it may be. It is operated by air.

Fig. 3 shows a train removing the snow from between the tracks in the terminals.

Fig. 4 shows the big lift bridge over the Kaministikwia River, where over 1500 cars of snow were dumped during the winter.

Fig. 5 shows cyclone snow blower for cleaning out loose or soft snow from the switches and leads. This is an invention of D. McIntyre, the Roadmaster of the Terminals. It is an ordinary fan attached to motor car, and having swinging spout so that it can be swung to either side of the track. Mr. McIntyre hopes to improve on this, so as to affect a big saving next winter.

Fig. 1. Snow Plough and Spreader.

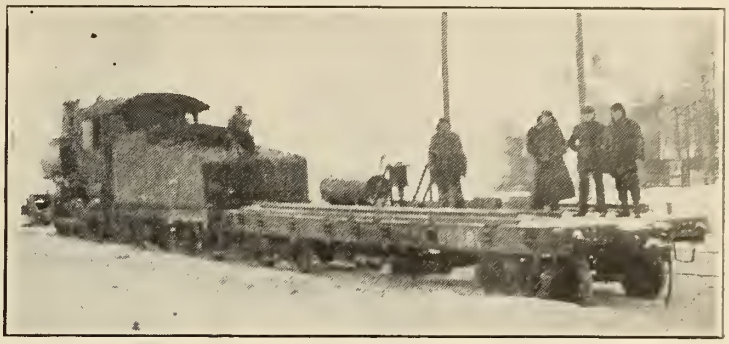


Fig. 2. Air Operated Ice Cutter.

Fig. 3. Removing Snow Between Tracks.

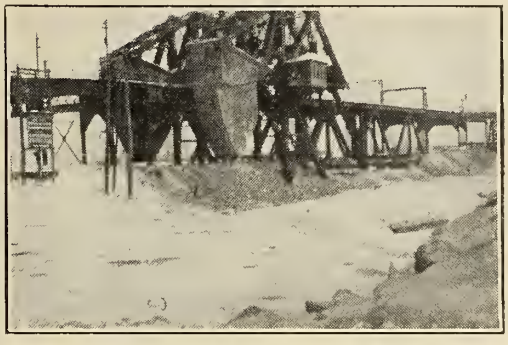


Fig. 4. Kaministikwia River Swing Bridge.

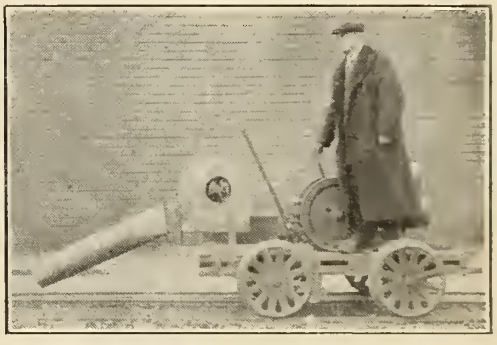


Fig. 5. Cyclone Snow Blower.

Customs Arrangements to Facilitate Coal Movements.

The Board of Railway Commissioners passed general order 182, Feb. 16, as follows:—Upon its being represented to the board that the movement of bituminous coal from the United States to Canada is delayed at the frontier for custom clearance, and that such delay can be obviated by the coal being entered for duty at interior ports of entry or outports; and upon reading what has been filed by the Commissioner of Customs stating that no objection exists to such obviation, although the coal may be billed for customs clearing at the frontier, it is ordered that railway companies be permitted to forward bituminous coal from the United States, billed for clearance of customs at the frontier, to its destination in Canada, if the destination be a customs port or outport, and if not, then to the customs port or outport nearest to but short of its destination, for customs clearance thereat, instead of at the frontier; the carriage from the frontier to the interior point of clearance to be in bond under customs manifest prepared by the railway company and signed by a customs officer.

Women Workers at Angus Shops, Canadian Pacific Railway.

In 1915 women workers were introduced into the C.P.R. Angus shops, Montreal, and 200 are now engaged. They have been organized and work under the supervision of Mrs. J. W. Bell, wife of the superintendent of the Windsor St. Station. Each woman has a locker in which she places her overalls and cap. At the outset it was difficult to induce some of the women to take kindly to the garments which tradition had marked out as male preserves, but after a little while every woman found these working dresses were more convenient than skirts. The overalls have three distinct recommendations: they are tidy, sanitary, and safe, allowing their wearers to move amongst the machines without danger of being drawn into machinery clutches.

The women work on the piece system, and they are paid at the same rate as the men. They work among the men with the harmony that prevails in offices where there are male and female clerks. In the Angus shops the woman are to be found sweeping, coach washing, coach painting, working on drills, at lathes, at various kinds of machinery, filing and drilling in the brass shops, brass polishing, operating nut-tapping machines, cleaning dynamos in the electrical department, assisting in the steamfitting centre, and making mattresses and pillows. No woman is asked to do heavy work.

The women take the provisions for their lunch can with them, and these they may prepare in the lunch can room which accommodates 200. Soup and bread are provided by the company at cost. Attached to the lunch can room is a rest room, and near the rest room is a first aid room where accidents are treated. Seventeen of the women workers hold certificates of proficiency in first aid work and their services are very valuable when accidents occur.

Men for Railway Work.—As one of the practical results of the National Service Commission's action in having cards filled up and signed throughout Canada, it may be mentioned that the Chief Railway Commissioner, in view of the fact that the transportation situation is somewhat unsatisfactory owing to a shortage of men, applied recently to the National Service Board, for a list of experienced men not working at their trades. As a result the names of from 500 to 600 such men were supplied him, and he transmitted them to railway companies requiring such assistance. The men had all expressed their willingness, in the interest of national service, to undertake any duty in Canada which might be necessary, having regard to conditions created by the war.

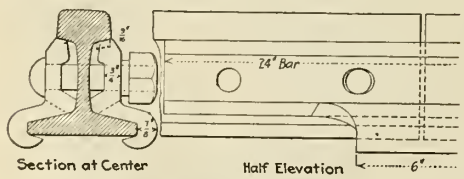
The Engineers in the War.—Capt. D. M. Mathieson, of the Canadian Engineers, who went overseas with the first contingent mobilized at Valcartier, Que., in 1914, and who spent 17 months in Belgium and France, principally in the Ypres region, addressed the Canadian Society of Civil Engineers, Toronto Branch, on Mar. 9, giving a most interesting description of the Canadian Engineers' organization and of their work at the front, dealing particularly with trench construction as well as with the other multitudinous duties.

Alleged Embezzlement.—A. E. D. Stewart, ticket agent, Chicago, Milwaukee & St. Paul Ry., Vancouver, B.C., was committed for trial recently on charges of theft of $2,698.96.

New Rail Joint of Grip Type.

A rail joint now in experimental use is so designed that the splice bars transmit the pressure or load upon the rail head directly to the junction of the web and base of the rail. The bars have a vise-like grip on the rails at this point, instead of a wedging fit between the head and base of the rails. In this way they prevent relative movement of the two rail ends, both laterally and vertically. The object is to hold the rail ends in exact line and level, and thus to prevent battering and wear of the top and side of the rail heads, as well as to prevent wear of the contact surfaces of the splice bars and rail heads. At the same time the joint is flexible enough to conform to the wave motion of the track.

The splice bars are 24 in. long, with 4 bolts, the alternate bolts having their heads on opposite sides of the rail. The end portions are of fishplate sections, with the lower edge fitted to the fillet of the rail. The middle portion of the bar has a wide flange that fits closely upon the rail base, and a special feature of the design is that this flange has a rib that hooks under the edge of the rail base. Thus the bars cannot oscillate or rock upon their bearings at the rail fillet. Wear upon the top surface of the bar and the bottom of its flange can be taken up by tightening the bolts. This rotates the bars on their bearings, drawing the upper



New Grip Rail Joint.

end inward and the flange upward, so as to maintain the two rails in proper level and line.

One of these joints is in use on 100 lb. rails near the end of a subway, where there is considerable wave motion in the track and where the traffic amounts to about 100 trains daily, with heavy equipment. During six months service the bolts have not required tightening and the joint did not become low, so that no tamping or raising was necessary. The joint is the invention of A. L. Clapp, Roadmaster of the Chicago & Northwestern Ry., Chicago.

A third new railway station at Buffalo, N.Y., is presaged in the approval by the Terminal Commission of plans for a new passenger and freight terminal for the New York Central Lines. The Lehigh Valley is already in its new station and the Lackawanna's new station is fast approaching completion. All three of these stations are within an area of four blocks, the New York Central being immediately alongside the Lehigh Valley. This new station will be on the site of the old, that is, extending along Exchange St. from Washington to Michigan St., and will have full passenger and freight accommodations.

Mount Chamberlin.—The Geographic Board of Canada has named a splendid peak in the Rocky Mountains "Mount Chamberlin," in honor of E. J. Chamberlin, President of the Grand Trunk and Grand Trunk Pacific Railways. The peak is at the southerly end of a massive mountain range in the Grand Fork amphitheatre, and is surpassed only by its near neighbor, Mount Robson.

Birthdays of Transportation Men in April.

Many happy returns of the day to:—

F. G. Adams, Commercial Agent, G. T. R., and Division Freight Agent, Grand Trunk Pacific Ry., Winnipeg, born at St. John's, Nfld., Apr. 6, 7878.

W. H. Ardley, Comptroller, G.T.R., Grand Trunk Pacific Ry., Montreal, born at London, Eng., Apr. 24, 1858.

Jas. Black, Freight Claim Agent, C.P. R., Vancouver, B.C., born near Seaforth, Ont., Apr. 19, 1858.

C. G. Bowker, General Superintendent Eastern Lines, G.T.R., Montreal, born at Medford, N.J., Apr. 21, 1871.

G. C. Briggs, Supervisor of Buildings, Eastern Lines, Canadian Northern Ry., Toronto, born at Cockermouth, Eng., Apr. 23, 1886.

A. V. Collins, Canada Steamship Lines, Ltd., Toronto, born at Island Pont, Vt., Apr. 21, 1868.

R. J. Collins, Chief Dispatcher, Edmonton Division, Alberta District, C.P.R., Edmonton, born at Winnipeg, Apr. 30, 1883.

Sir Henry L. Drayton, K.C., Chief Railway Commissioner for Canada, Ottawa, Ont., born at Kingston, Ont., Apr. 27, 1869.

W. A. Duff, M.Can.Soc.C.E., Assistant Chief Engineer, Canadian Government Railways, Moncton, N.B., born at Hamilton, Ont., Apr. 20, 1877.

A. E. Edmonds, General Agent, C.P.R., Detroit, Mich., born at Woodstock, Ont., Apr. 8, 1866.

A. Gaboury, Superintendent, Montreal Tramways Co., Montreal, born there, Apr. 6, 1875.

B. C. Gesner, Moncton, N.B., formerly Air Brake Inspector, I.R.C., now Eastern Sales Agent, Galena Signal Oil Co., born at Cornwallis, N.S., April 23, 1859.

J. Murray Gibbon, General Publicity Agent, C.P.R., Montreal, born at Udewella, Ceylon, Apr. 12, 1875.

V. A. Harshaw, Assistant Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal, born at Mono, Ont., Apr. 26, 1865.

J. M. Horn, Assistant General Freight Agent, Canadian Northern Ry., Winnipeg, born at Allanton Mills, Lanarkshire, Scotland, Apr. 12, 1880.

J. H. Johnston, Superintendent of Bridges and Buildings, Eastern Lines, G.T.R., Montreal, born at Uxbridge, Ont., Apr. 22, 1866.

G. W. Lee, Commissioner, Timiskaming & Northern Ontario Ry., North Bay, Ont., born at Renfrew, Ont., Apr. 15, 1871.

J. D. McMillan, acting Superintendent, Belleville Division, Ontario Lines, G.T.R., Belleville, born in Eldon Tp., Ont., Apr. 5, 1858.

J. A. Macgregor, Superintendent, Edmonton Division, Alberta District, C.P.R., Edmonton, born at Dufftown, Scotland, Apr. 5, 1873.

B. R. Marsales, District Freight Agent, Canadian Northern Ry., Calgary, Alta., born at Guelph, Ont., Apr. 13, 1887.

J. H. Mills, Master Mechanic, Algoma District, C.P.R., North Bay, Ont., born at Sherbrooke, Que., Apr. 23, 1865.

P. Mooney, General Freight and Passenger Agent, Halifax & South Western Ry., Halifax, N.S., born at St. Cathar-Ry., Halifax, N.S., born at St. Catherines, Que., Apr. 19, 1871.

Paul J. Myler, President, Canadian Westinghouse Co., Ltd., Hamilton, Ont., born at Pittsburg, Pa., Apr. 24, 1869.

F. L. Nason, General Agent, Passenger Department, C.P.R., San Francisco, Cal., born at Newton, N.H., Apr. 16, 1880.

G. D. Perry, General Manager, Great North Western Telegraph Co., Toronto, born at Whitby, Ont., Apr. 19, 1858.

R. A. Pyne, Superintendent of Motive Power and Car Department, Eastern Lines, C.P.R., Montreal, born at Toronto, Apr. 10, 1874.

R. S. Richardson, Superintendent, District 3, Transcontinental Division, Canadian Government Railways, Fort William, Ont., born at Napanee, Ont., April 9, 1865.

F. Rioux, Assistant to President, Reid Newfoundland Co., St. John's, Nfld., born at Trois Pistoles, Que., April 18, 1867, now on active service.

W. A. Ritchie, District Superintendent, Pullman Co., Montreal, born at Edinburgh, Scotland, Apr. 13, 1854.

E. W. Smith, Superintendent, Dining and Parlor Car Service, G.T.R., Toronto, born at North Bridge, Mass., Apr. 21, 1869.

D. F. Thomas, General Manager, Algoma Eastern Ry., Sudbury, Ont., born in Halton County, Ont., Apr. 20, 1867.

W. S. Tilston, Chief of Montreal Board of Trade Transportation Bureau, born at Manchester, Eng., Apr. 14, 1877.

C. H. Towle, Assistant Superintendent, Brownville Division, New Brunswick District, C.P.R., Brownville, Jct., Me., born at Enfield, Me., Apr. 13, 1878.

E. D. Toye, ex-Storekeeper, Ontario Division, Canadian Northern Ry., Trenton, born at Dalston, Ont., Apr. 27, 1891, now on active service.

E. M. Wood, Deputy Municipal and Railway Commissioner for Manitoba, born at Brantford, Ont., Apr. 20, 1858.

W. Woollatt, Vice President and General Manager, Essex Terminal Ry., Walkerville, Ont., born at Weedon, Hertfordshire, Eng., Apr. 2, 1855.

Repairs Etc. Ordered on St. Martins Railway.

The Board of Railway Commissioners passed Order 25865, Feb. 14, as follows: Upon the report and recommendation of the Board's Assistant Chief Engineer, concurred in by its Chief Engineer, it is ordered that the St. Martins Ry. repair the bridges on its line as follows: McCracken Brook—Decayed stringers to be replaced. Robinson Road—Requires new caps and some new stringers. One bent is not perpendicular and should be braced, and one mud sill should be straightened up. Nodwell bridge—Requires new guard rail. Moonlight trestle—Decayed stringers, posts and mud sills to be replaced. Titus Mill bridge—Some new caps and mud sills required. Titus Mill bridge no. 2 — Decayed stringers to be replaced. German Brook—New steel span to be constructed, or present wooden truss to be repaired. Hanford Brook—New steel span to be constructed, or present wooden truss to be repaired. Porter Brook—New steel span to be constructed, or present wooden truss to be repaired. High Bridge—Floor beams to be replaced and bent in north approach to be repaired.

And it is further ordered that the company reconstruct its roadbed where it runs along the hillside just north of Upham station, where the embankment has been washed away; and erect road crossing signs at highway crossings. The work herein required to be done is to be commenced by April 1, 1917, and completed within 60 days thereafter.

Ladder Dredge for Clearing Snow.

A ladder dredge for excavating snow on the Chilean Trans-Andean Ry. has been designed by W. T. Lucy, of the road's engineering staff. This railway is already equipped with a rotary snow plough built by the American Locomotive Co., but Mr. Lucy states that in deep cuts when the snow is filled to a greater depth than 15 ft., the plough does not work well, as snow has to be shoveled off by hand from the top of the cut. More serious trouble is experienced when a deep cut is filled with snow by an avalanche, as pieces of rock are often brought down with the snow and cause much damage when struck by the rapidly moving blades of the rotary excavator. Mr. Lucy has therefore designed a snow clearing machine consisting of two parallel ladders carrying endless chains of buckets of the pattern usually employed for excavating stiff clay. The snow excavated by these buckets is discharged into a hopper, from which it is discharged by gravity upon a centrifugal ejector which throws it either to the right or left of the track as required. The approximate weight of the machine is about 60 tons. The Chilean Trans-Andean Ry. has not yet been financially able to purchase the machine, but intends to try it as soon as circumstances permit.

Advice to G.T.R. Employes.

E. J. Chamberlin, President G.T.R. and G. T. Pacific Ry., has issued a card as follows: "I desire to bring to the attention of G.T.R. employes the following verses by E. A. Guest, published in the Detroit Free Press. I trust you will study same carefully and that they may prove an inspiration to each of you, with consequent beneficial results to the company which employs you."

Not His Job.

"I'm not supposed to do that," said he
When an extra task he chanced to see;
"That's not my job, and it's not my care,
So I'll pass it by and leave it there."
And the boss who gave him his weekly pay
Lost more than his wages on him that day.

"I'm not supposed to do that," he said,
"That duty belongs to Jim or Fred."
So a little task that was in his way
That he could have handled without delay
Was left unfinished; the way was paved
For a heavy loss he could have saved.

And time went on and he kept his place
But he never altered his easy pace,
And folks remarked on how well he knew
The line of the task he was hired to do;
For never once was he known to turn
His hands to things not of his concern.

But there in his foolish rut he stayed
And for all he did he was fairly paid,
But he was never worth a dollar or more
Than he got for his toil when the week was o'er;
For he knew too well when his work was through
And he'd done all he was hired to do.

If you want to grow in this world, young man,
You must do every day all the work you can;
If you find a task, though it's not your bit,
And it should be done, take care of it;
And you'll never conquer or rise if you
Do only the things you're supposed to do.

Saskatchewan Engineers' Organization.—The Canadian Society of Civil Engineers, Saskatchewan Branch, has appointed L. A. Thornton, J. N. de Stein, of Regina, and J. D. Mackie of Moose Jaw, as a committee to consider matters in connection with the proposed provincial legislation as to the engineering profession. A paper on "Some Aspects of Indian Engineering" was read at a meeting on Mar. 8, by G. W. Montgomery.

The Canadian Pacific Railway's Honor Roll No. 18.

Alexander, George B.	Laborer	Calgary	Wounded
Allingham, J. R. E.	Brakeman	Medicine Hat	Presumed dead
Armstrong, Arthur P.	Brakeman	Cranbrook	Presumed dead
Bailey, Arthur	Clerk	Outremont	Wounded
Beggs, J. P.	Switchman	Glen Yard	Wounded
Bell, Gerald Joseph	Clerk	Winnipeg	Wounded
Bennet, John George	Nut tapper	Winnipeg	Wounded
Bibby, Lawrence	Wiper	Calgary	Wounded
Biddlecombe, G. A.	Constable	Vancouver	Wounded
Bishop, Gilbert	Clerk	Montreal	Wounded
Blois, George	Locomotive man	Regina	Presumed dead
Bowden, Chris. J.	Checker	New Westminster	Presumed dead
Brown, John A.	Trainman	Regina	Suffering from shock
Buckle, Thos. W.	Locomotive fireman	Brandon	Died of wounds
Campbell, George	Fireman	B. C. Coast Strs.	Killed in action
Chaffey, Joseph	Waiter	Montreal	Died of wounds
Chapman, George	Checker	Vancouver	Wounded
Clark, Charles B.	Clerk	Angus	Died of wounds
Colley, Vincent	Locomotive fireman	Minnedosa	Killed in action
Copping, Ernest N.	Instrumentman	Weyburn	Wounded
Corbin, Harold J.	Steamfitter	McAdam Jct.	Killed in action
Cornwall, Chas. W.	Buffer	Angus	Presumed dead
Cregg, Joseph	Tinsmith	West Toronto	Wounded
Crouch, Jack	Porter	Port McNicoll	Died of wounds
Cumine, Butler P.	Night watchman	Glacier House	Presumed dead
Davidson, Henry	Apprentice carpenter	Winnipeg	Suffering from shock
Davies, John T.	Brakeman	Moose Jaw	Wounded
Decker, Archie	Apprentice	Coquitlam	Killed in action
Delaney, Martin	Locomotive fireman	Outremont	Wounded
Dickinson, Chas. E.	Machinist's apprentice	Winnipeg	Presumed dead
Dove, Andrew	Machinist	Winnipeg	Killed in action
Dubois, John	Janitor	Regina	Presumed dead
Edgar, John	Painter	B. C. District	Wounded
Fawcett, Archie	Clerk	Moose Jaw	Wounded
Gallagher, Jas. W.	Checker	Montreal Wharf	Presumed dead
Gammon, Lee	Locomotive fireman	Cranbrook	Wounded
Gordon, Harry	Wiper	Medicine Hat	Presumed dead
Gray, David	Locomotive fireman	B. C. District	Wounded
Green, John	Wiper	Minnedosa	Wounded
Greentree, Geo. D.	Rodman	Strathmore	Killed in action
Guyot, Alfred	Boilermaker's appren.	Angus	Suffering from concussion
Gwinn, Cecil	Wiper	Dunmore	Wounded
Hall, Joseph	Storeman	Montreal	Presumed dead
Harrison, Robt. H.	Trimmer	West Toronto	Wounded
Henderson, John	Locomotive fireman	Kenora	Wounded
Hern, Loftus Roy	Clerk	Edmonton	Presumed dead
Hill, Albert	Car repairer	North Bay	Presumed dead
Hinton, Thomas	Car repairer	Windsor, Ont.	Killed in action
Jenkins, Alexander	Clerk	Montreal	Died of wounds
Johnson, W.	Pantryman	Chateau Frontenac	Killed in action
Kay, Robert	Cook	Montreal	Wounded
Keay, George N.	Locomotive fireman	Cranbrook	Wounded and missing
Kinne, Hudson P.	Trainman	La Riviere	Wounded
Lamourie, Peter	Switchman	Winnipeg	Wounded
Lawson, Frederick	Lineman	Revelstoke	Wounded
Leonard, Frederick	Specialist	Angus	Presumed dead
Lewis, Arnold	Cook	Montreal	Wounded
Longmire, Harold	Transferman	North Bay	Died of wounds
Loveridge, Harold D.	Laborer	Glen Yard	Wounded
Lowe, George	Loader	Lethbridge	Wounded
McDermott, Chas.	Bellboy	Winnipeg	Presumed dead
McKenzie, Alex.	Cook	Montreal	Wounded
McNicol, James	Trainman	North Bay	Wounded
Marr, Lionel Geldert	Gardener	Duncan	Suffering from shock
Mead, Mark	Cook	Montreal	Died of wounds
Morkill, Francis E.	Transport'n student	Toronto	Killed in action
Newman, George S.	Clerk	Winnipeg	Wounded
Norton, Cecil H.	Draftsman	Montreal	Presumed dead
Parkinson, Alfred O.	Brakeman	Red Deer	Killed in action
Parnell, Reginald R.	Laborer	Muskoka	Wounded
Pope, Chirs. L.	Stakeman	Kootenay Cent. Ry.	Presumed dead
Queenville, Stephen	Sectionman	Green Valley	Wounded
Renton, Sidney C.	Locomotive man	Lethbridge	Presumed dead
Robinson, Alfred	Leading handler	Montreal	Wounded
Robinson, John R.	Cook	Montreal	Wounded
Roughton, Clifford G.	Baggage checker	Calgary	Presumed dead
Sexton, F. J.	Laborer	Winnipeg	Wounded
Spencer, Kenneth M.	Clerk	Cranbrook	Killed in action
Sweeney, James A.	Purser	B. C. Lake Strs.	Died of wounds
Todd, Arthur	Brakeman	Laurentian Div.	Died of wounds
Wade, Robert C.	Locomotive fireman	Winnipeg	Killed in action
Westwood, William	Chef	Montreal	Believed killed
Wood, W. J.	Waiter	B. C. Coast Strs.	Presumed dead
Woodward, Frederick	Car repairer	Cranbrook	Killed in action

Increase in Cost of Railway Coal.

The coal bill of Canadian railways will show an increase of over $8,000,000 this year. The railway coal contracts are mostly made to cover a twelve month period from April to April each year, and the railway purchasing officers are now making their agreements with the mines. "Just what the actual increase will be cannot be determined for a few weeks," said one purchasing agent in Montreal recently, "but indications are that the increase in the price of railway coal will range from 75 to 150% over last year's prices. The fuel bill of the railways is already an enormous one, and the new additions to the price will prove a heavy strain on the revenues of the roads. The Canadian lines carry an added burden in the form of a 7½% duty on the coal imported. This tax is under the War Revenue Act of 1915, and is computed on the value of the coal. With the doubling up in the price of fuel during the next twelve months, this taxation will also be increased to a very large figure. A very large proportion of the coal used on Canadian railways must be brought from the United States. The cause of the increased price lies in the abnormal demand for all classes of steam coal, due to the great industrial activity prevailing. Plants which previously ran 12 hours a day are now operating for the full 24 hours, and fuel demands have increased proportionately. Just what the future holds in the way of ever increasing costs of operation for railways cannot be accurately gauged, but the increase in the price of coal finds a parallel in nearly all other staples used by the lines. That the situation is very serious, railway executives fully realize, especially as they are selling transportation service at rates fixed long before these increases were thought probable or possible."

Canadian Pacific Railway Double Track Mileage.

The following table shows the double track actually in operation by the C.P.R.

	Miles.	Miles.
Quebec District.		
Montreal (Windsor St.)—Smiths Falls yard	129.20	
Montreal West—Brookport	44.79	
Montreal West—Mile End	7.11	
Montreal (Place Viger)—Ste. Therese	20.11	
Montreal Terminals (additional mileage)	3.90	
		205.11
Ontario District.		
Smiths Falls—Glen Tay	14.83	
Agincourt—Leaside	7.58	
Don—Parliament St.	0.78	
Toronto—Guelph Jct.	39.10	
Toronto (Bathurst St. Jct.)—Hamilton	39.10	
North Toronto line	3.93	
London Terminals	0.62	
		105.95
Algoma District.		
Romford—Sudbury	6.80	
Azilda—Genever	30.20	
Roberts—Woman River	25.90	
Nemegos—Esher	25.50	
Healy—Bolkow	19.10	
Depew—King	27.10	
Heron Bay—Peninsula	8.40	
Selim—Pays Plat	13.70	
Cavers—Gurney	11.00	
Fire Hill—Rugby	4.20	
Navilus—Port Arthur	8.10	
		180.00
Manitoba District.		
Port Arthur—Winnipeg	426.30	
Winnipeg Terminals	23.20	
Winnipeg—Virden	179.30	
Whitewood—Broadview	14.30	
		643.00
Saskatchewan District.		
Broadview—Grenfell	16.00	
Indian Head—Swift Current	194.20	
		210.20
Alberta District.		
Swift Current—Java	6.00	
Calgary Terminals	6.20	
		12.20
British Columbia District.		
Connaught—Glacier	5.80	
Revelstoke—Taft	24.20	
Pritchard—Kamloops	24.10	
Kamloops—Tranquille	8.70	
Ruby Creek—Vancouver	81.10	
		143.90
		1,500.36

*The 39.10 miles between Bathurst St. Jct., Toronto & Hamilton, is G.T.R., over which the C.P.R. has running rights.

The total of 1,500.36 miles is very much greater than the double track mileage of any other line in Canada; in fact it exceeds that of all the other Canadian railways put together. Alternative routes are also in operation between the points named below and they are practically equivalent to double track. The mileage of the shortest route between the two points is shown in each case.

	Miles.
Ontario District—	
Gley Tay to Agincourt via Peterboro..	181.70
Manitoba District—	
Virden and McAuley	36.50
Alberta District—	
Java and Bassano	230.20
Gleichen and Shepard	41.00
	489.40

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearings took place, and not those on which the orders were drawn.

General order 182, Feb. 16.—Re forwarding of bituminous coal from United States billed for clearance at frontier. This order is given in full on another page.

General order 183, Feb. 24.—Re filing of express companies tariffs. This order is given in full on another page.

25873. Feb. 19.—Ordering Vancouver, Victoria & Eastern Ry. & Navigation Co. to build farm crossing for R. C. Johnston, Bridesville, B.C., at his cost; work to be completed within 30 days.

25874. Feb. 16.—Authorizing C.P.R. to build spurs for Credit River Works, Ltd., Toronto Tp., Ont.

25875. Feb. 17.—Approving plans showing freight sheds to be erected by Northern Pacific and B. C. Ry. Co. at New Westminster, B.C.

25876. Feb. 20.—Authorizing Canadian Northern Ry. to occupy C.P.R. land, being part of s.e. ¼ Sec. 32-16-26, w. 2 m. Sask.; if parties fail to agree as to compensation, same to be determined by arbitration clauses of Railway Act.

25877. Feb. 16.—Approving agreement between Bell Telephone Co. and Graham Private Telephone Line, Ltd., Terrebonne County, Que.

25878. Feb. 16.—Authorizing Canadian Northern Ry. to remove Celtic Brick Co.'s spur near Prince Albert, Sask.

25879. Feb. 19.—Approving agreement between Bell Telephone Co. and Saugeen Rural Telephone Co., Bruce County, Ont.

25880. Feb. 20.—Ordering C.P.R. to build farm crossing for R. J. Jary, Winnipeg, Mnn., at his cost; work to be completed by May 1.

25881. Feb. 19.—Ordering that half interlocking plant installed at crossing of G.T.R. Lachine Wharf Branch, by Montreal Park & Island Ry. (Montreal Tramways Co.), at Notre Dame St., Lachine, Que., be operated between 6.30 a.m. and 6 p.m. by signalman, appointed and paid by M. T. Co.; and, until traffic shall demand night and day signalmen, any G.T.R. movement after 6 p.m. to be flagged over crossing by G.T.R. crew.

25882. Feb. 22.—Ordering Canadian Northern Ry. to enlarge station at Birch Hills, Sask., and relocate same at east end of yard, on south side of tracks; to be completed by Sept. 1.

25883. Feb. 22.—Authorizing Provincial Bank of Canada, St. Eustache, Que., to repay C.P.R. $1,250 deposited to the Board's credit with accrued interest.

25884. Feb. 22.—Ordering C.P.R. and Grand Trunk Pacific Ry. to interchange traffic on existing government elevator track at Moose Jaw, Sask., pending location of permanent transfer tracks, and in meanwhile operation under order 25485, Sept. 30, 1916, is suspended.

25885. Feb. 23.—Requiring Grand Trunk Pacific Ry. to appoint station agent at Delburne, Alta., by Feb. 28.

25886. Feb. 23.—Amending order 25848, Feb. 3, re Canadian Northern Ry. highway diversion between Sec. 15-27-4 and Sec. 2-28-4, w. 4 m., Alta.

25887. Feb. 24.—Ordering Canadian Northern Quebec Ry. to build boom about 1,200 ft. long on Rouge River, Arundel Tp., Que., according to plan filed; to be completed by Apr. 1.

25888. Feb. 24.—Approving revised location of C.P.R. shelter at Emery, Ont.

25889. Feb. 19.—Ordering G.T.R. to appoint watchman at crossing just east of Amigari station, Ont., between 7 a.m. and 7 p.m., daily, watchman to see all cars are kept back 100 ft. from each side of crossing; G.T.R. to be relieved from speed limitation of 10 miles an hour at crossing.

25890. Feb. 22.—Authorizing G.T.R. to rebuild bridge 290 over Pine River, Essa Tp., Ont.

25891. Feb. 15.—Approving agreement between Bell Telephone Co. and East Luther Telephone Co., Dufferin County, Ont., Feb. 6.

25892. Feb. 26.—Authorizing C.P.R. and Sudbury-Copper Cliff Suburban Electric Ry. to operate over crossing in Sudbury, Ont., without first stopping; speed over crossing limited to 10 miles an hour.

25894. Feb. 22.—Rescinding order 24968, May 6, 1916, re rates on pig lead, spelter and antimony. This order is given in full on another page.

25895. Feb. 26.—Ordering C.P.R. to build standard A-2 station at Major, Sask., by July 1.

25896. Feb. 26.—Relieving C.P.R. from providing further protection at crossing between Secs. 11 and 14-17-9, w. 2 m., Sask.

25897. Feb. 22.—Rescinding order 25082, June 17, 1916, re rates on copper commodities from Spelter, Grand Forks and Greenwood, B.C., to Eastern Canada. This order is given in full on another page.

25893. Feb. 26.—Authorizing Mount Royal Tunnel & Terminal Co. (C.N.R.) to build its railway, temporarily, for not exceeding 5 years from date, across Cote de Liesse Road, St. Laurent Parish, Que., and reserving right to parties concerned to apply to board for variation of order on a changed state of facts.

25898. Feb. 26.—Extending, for 30 days from date, time within which C.P.R. shall install bell at crossing between Lot 22, Con. 1, and Lot 22, Broken Front Con., Darlington Tp., Ont.

25899. Feb. 26.—Authorizing C.P.R. to rebuild bridge 75.6 over Dutch Creek, Kootenay Central Subdivision, B.C.

25900, 25901. Feb. 26.—Authorizing Canadian Northern Ontario Ry. to build bridges across Gordon Creek at mileage 110.7 and 110.9 north from Parry Sound.

25902. Feb. 26.—Authorizing C.P.R. to make highway diversion along southern boundary of right of way in n.e. ¼ Sec. 9-10-10, w.2 m. in lieu of road allowance on eastern boundary; diversion to cross tracks at grade; C.P.R. to close diverted portion within right of way limits.

25903. Feb. 26.—Approving Essex Terminal Ry. Standard Tariff C.R.C. 361, and rescinding order 10016, Mar. 30, 1910, approving its Standard Freight Tariff C.R.C. 37.

25904. Feb. 26.—Re clause in C.P.R. schedules respecting existing milling-in-transit arrangement at Montreal with respect to destinations on Canadian Government Railways. This order is given in full on another page.

25905. Feb. 26.—Ordering Canadian Northern Ry. to build station at Norway Bay, Que., by May 1.

25906. Feb. 28.—Amending order 15090, Oct. 11, 1911, authorizing construction of subway at Birch Ave., Hamilton, Ont., under Toronto, Hamilton & Buffalo Ry. spur; to provide that cost of maintaining subway be paid by city.

25907. Feb. 27.—Amending order 25558, Oct. 20, 1916, re crossings of highway by G.T.R. and C.P.R. at Dorval, Que.

25908. Feb. 28.—Authorizing Michigan Central Rd. to operate interlocking plant at crossing of G.T.R., at Canfield, Ont.

25909. Feb. 28.—Authorizing Toronto, Hamilton & Buffalo Ry. to operate its car ferry dock and slip on Grand River at Port Maitland, Ont.

25910. Mar. 2.—Authorizing Alberta Public Works Department to extend Newlands St., Lougheed, across C.P.R.

25911. Mar. 2.—Approving stress sheet, Dec. 15, 1916, showing details of superstructure between bents 12 and 15 over C.P.R., at Moose Jaw, Sask., authorized by order 20376, Sept. 20, 1913.

25912. Mar. 1.—Ordering Bell Telephone Co. to remove and relocate its poles on Main St., Richmond, Que.

25913. Mar. 2.—Amending order 25905, Jan. 12, requiring Canadian Northern Ontario Ry. to erect shelter at Merivale, Ont.

25914. Mar. 2.—Authorizing Alberta Public Works Department to build highway crossing over C.P.R. between Secs. 28 and 33-43-11, w. 4 m.

25915. Mar. 2.—Authorizing Canadian Northern Ry. to build transfer track under Moose Jaw Electric Ry. at Fourth Ave.

25916 to 25921. Mar. 5.—Authorizing British Columbia Public Works Department to build highway crossings over C.P.R. at mileages 32.62, 28.64, 29.42 west of Revelstoke; 4.46 south of Revelstoke; 37.61 and 43.38 west of Revelstoke.

25922. Mar. 5.—Authorizing C.P.R. to divert road allowance on southerly boundary of Sec. 27-20-6, w. 2. m., Sask.; to carry diversion across its Neudorf Subdivision, at grade, at mileage 113.8, and to close diverted portion within the right of way limits.

25923. Mar. 5.—Authorizing Canadian Northern Ry. to build bridge across Wilson River at mileage 186.7, Kamsack Subdivision, Man.

25924 to 25926, Mar. 6.—Approving Bell Telephone Co.'s agreements with Silver Creek Telephone Association, Bruce County, Ont., July 20, 1915; Snake River Telephone Association, Renfrew County, Ont., Aug. 25, 1915; and Metcalfe Rural Telephone Co., Carleton County, Ont., Feb. 23, 1917; and rescinding order 12254, Nov. 11, 1910, approving agreement dated Jan. 19, 1910.

25927, Mar. 5.—Authorizing Toronto, Hamilton & Buffalo Ry. to build spur in Hamilton, Ont., from its belt line, near Primrose Ave., northerly across Primrose Ave., two alleys, and Chipman Holton Knitting Co.'s lands, to point marked "earth bumping post, 5+70."

25928, Mar. 6.—Approving plan showing layout of proposed interlocking plant to be installed where Trent Valley Canal crosses Canadian Northern Ontario Ry. near Washago.

25929, Mar. 7.—Authorizing C.P.R. to buld spur for Mond Nickel Co., at mileage 25.1, in Lot 2, Con. 2, Drury Tp., Ont.

25930, Feb. 7.—Authorizing C.P.R. to build diversion at grade across tracks in lieu of existing road allowance on eastern boundary of s.e. ¼ Sec. 28-16-25, w. 2 m., Sask.; and to close diverted portion within right of way limits.

25931, Mar. 9.—Authorizing Canadian Northern Quebec Ry. to build spur for International Manufacturing Co., Ltd., Longue Pointe Parish, Montreal.

25932, Mar. 10.—Ordering that crossing of Canadian Northern Ry. and C.P.R. at Bay Bridge Road, Belleville, Ont., be protected by gates operated by day and night watchmen; cost to be divided equally between companies.

25933, Mar. 12.—Approving plans, Nov. 1, 1916, showing electrification of Mount Royal Tunnel & Terminal Co.'s railway and crossings of Jacques Cartier Union Ry. and Cartierville Road, excepting portion south of Cathcart to Lagaucheticre St., Montreal.

25934, Mar. 9.—Directing that cost of supplies for cabin and watchmen at crossing of Main St., Hamilton, Ont., under order 24328, Oct. 16, 1915, be divided equally between City of Hamilton, G.T.R. and Hamilton, Grimsby & Beamsville Electric Ry.

25935, Mar. 12.—Authorizing Canadian Northern Ry. to build additional siding for Edwin Crabtree & Sons, Crabtree, Que., to be completed within three months from date.

25936, Mar. 12.—Authorizing G.T.R. to build spur for Canadian Steel Foundries, Ltd., Montreal.

25937, Mar. 13.—Authorizing C.P.R. and Jacques Cartier Union Ry. to operate trains, over crossing at Ballantyne, Montreal, without first stopping.

25938, Mar. 13.—Authorizing G.T.R. to build spur for Grasselli Chemical Co., Hamilton, Ont.

25939, Mar. 14.—Approving plan, Feb. 13, showing location of G.T.R. passenger station adjoining Church St., Mimicoe, Ont., authorized under order 25851, Jan. 30.

25940, Mar. 17.—Extending for three months from date time within which G.T.R. shall complete spur for International Harvester Co. of Canada, Hamilton, Ont., authorized under order 24801, Mar. 14, 1916.

25941 to 25943, Mar. 16.—Approving Bell Telephone Co.'s agreements with South Diagonal Telephone Association, Grey County, Ont., June 5, 1915; Upper Admaston Telephone Co., Renfrew County, Ont., Feb. 22, 1917; Udney Telephone Co., Ontario County, Ont., Mar. 3, 1917.

25944, Mar. 16.—Approving Canadian Northern Ry. Supplement 1 to Tariff C.R.C. no. W-1283, providing for maximum passenger fare of 4c. a mile on line west of Tannis, Alta.

25945. Mar. 19—Ordering Niagara, St. Catharines & Toronto Ry. Co. to proceed forthwith with such alterations or additions to its rails and electrical connections thereof as will result in preventing further injury to underground metal pipes of Niagara Falls Corporation, Ont., and Provincial Natural Gas & Fuel Co.; work to be completed within three months.

25946. Mar. 20.—Authorizing Canadian Northern Quebec Ry. to build spurs for Imperial Oil Co., Ltd., in Pointe aux Trembles Parish, Que.; to cross Montreal Terminal Ry., C.N.Q.R., and Montreal Tramways Co.'s tracks on Notre Dame St.; and to remove cross-over tracks shown in red on plan; protection at crossings to be approved by Board's Chief Engineer.

25947. Mar. 19.—Authorizing Canadian Northern Ry. to build across Sixth Ave., Moose Jaw, Sask., and rebuild bridge there.

25948. Mar. 19.—Ordering Edmonton, Dunvegan & British Columbia Ry. to appoint caretaker at Tomkin's Crossing, Alta., to see that station is kept for accommodation of passengers and package and perishable freight, and for delivery of shipments between 8 a.m. and 6 p.m.

25949. Mar. 13.—Ordering Grand Trunk Pacific Ry. to erect shelter at Keppel, Sask., not to be below Board's standard 1-A; to provide for heating same, and the necessary flagging equipment.

25950. Mar. 19.—Dismissing C.P.R. application for order apportioning cost of signals to be provided on its Winnipeg Beach Subdivision, Man.

25951. Mar. 19.—Dismissing dispute between Grand Trunk Pacific Ry. and Canadian Northern Ry regarding reparation claimed by G.T.P.R. on account of C.N.R. interswitching to Canada Cement Co.'s spur, Winnipeg.

25952. Mar. 21.—Authorizing North American Collieries, Ltd., to build two mine entries under Grand Trunk Pacific Ry. in Sec. 19-53-7, w.5m., Alta.

25953. Mar. 21.—Authorizing Canadian Northern Ry. to build across road allowance between Secs. 28 and 33-4-12, w.p.m., Man.

25954. Mar. 22.—Establishing delivery limits for Dominion Express Co. in Trail, B.C. This is given fully under "Among the Express Companies" on another page.

25955. Mar. 21.—Authorizing Canadian Northern Ry. to build spur for Woodward Elevator Co., Portage la Prairie, Man.

25956. Mar. 22.—Authorizing C.P.R., Canadian Northern Ry. and Grand Trunk Pacific Ry. to charge $3 a car for lining cars for flaxseed in bulk, subject to conditions in order 23894, June 22, 1915.

25957, 25958. Mar. 22.—Relieving C.P.R. from providing further protection at highways near Kent Bridge and Merrickvile, Ont.

25959. Mar. 22.—Requiring Boston & Maine Rd. to install bell at Comstock Bridge crossing, near Lennoxville, Que.

25960. Mar. 23.—Approving agreement between Bell Telephone Co. and Flos Tp., Ont., Feb. 13, 1917.

25961. Mar. 22.—Ordering Edmonton, Dunvegan & British Columbia Ry. to build siding and station facilities to take care of l.c.l. freight and express matter, and shelter for passengers, at west switch of branch connection in Sec. 16-78-5, w.6m., Alta.; work to be completed by July 15; station not to be below standard 1-B.

25962. Mar. 24.—Amending order 25949, Mar. 13, substituting Mead for Keppel.

General order 184. Mar. 22.—Amending order 8860, Dec. 10, 1909, re supply of car doors by railway companies.

Railway Development, Projected Lines, Surveys, Construction Betterments, Etc.

Alberta & Great Waterways Ry.—R. Douglas, Inspecting Engineer of the Alberta Railways Department, returned to Edmonton, Mar. 5, from an inspection of construction on the line. He is reported to have said that steel is laid to mile 240, within 50 miles of McMurray, and that the intervening mileage is expected to be laid by the middle of April. Tracklaying was commenced on Dec. 17, at mileage 202, but was held up from time to time by snow and other bad weather conditions. It was expected to have the track laid to Clearwater River, mileage 274, before the end of March, which would open traffic to McMurray by scows. The whole of the bridge work has been completed. Freight is being carried by the railway to mileage 233 and is teamed thence to McMurray. (Mar., pg. 100.)

Central Canada Rd. & Power Co.—A committee of the Manitoba Legislature, which has been considering the bill asked for by this company, has struck out all the sections and clauses granting power franchises, and the bill simply becomes one for the incorporation of a company to build a railway. The title will probably be altered to the Central Ry. Manitoba Co., so as to make it conform to the other J. D. McArthur charters in Saskatchewan and Alberta. The intention of the company is said to be to start at Selkirk or St. Boniface this spring and build to Winnipeg River. Next year the road may be pushed on to the mines at Rice Lake, as the charter will call for completion of at least 100 miles in two years. Within five years the entire line to Hudson Bay, 400 miles, must be built. A section is being added to give the Manitoba Government power to purchase the entire undertaking at any time for the then fair value as a going concern. (Mar., pg. 100.)

Central Canada Ry.—Application is being made to the Minister of Public Works, under the Navigable Waters Protection Act, for approval of site of and plans for a bridge across the Peace River in front of Lot 4, Block 1, River Lot 8, of the Peace River Settlement at Peace River, Alta.

W. R. Smith, Chief Engineer, is reported to have said, Mar. 12, that rapid progress is being made with the work of putting in the substructure for this bridge. The caisson for pier 8 was successfully launched through the ice, Feb. 24; and those for piers 6 and 7 are nearly ready for launching. Gangs are working night and day at the bridge site. (Feb., pg. 50.)

Central Canada Saskatchewan Ry. — The Saskatchewan Legislature has incorporated a company with this title to build from the western boundary of the province to Prince Albert, and such other lines as may be designated by the government. This is part of the McArthur lines now under construction in Alberta, which it is proposed to connect with points in Saskatchewan, and, according to press reports, with Winnipeg. (Mar., pg., 100.)

Crows Nest & Tent Mountain Ry.—The Alberta Legislature is being asked to incorporate a company with this title to build a railway from Crowsnest, on the C.P.R. line, west of Macleod, southerly through Tps. 8 and 7, west of the 5th Meridian, to and across the s. ½ of Section 63, Tp. 7, Range 6, about six miles. The office is to be at Tent Mountain, Alta.; the capital is fixed at $50,000, and bonds are to be issued for $20,000 a mile. The provisional directors are: J. C. McDonald, L. McDonald and W. G. Atkinson, Edmonton, Alta.

Esquimalt & Nanaimo Ry. — H. S. Beasley, General Superintendent, Victoria, B.C., is reported to have said in an interview recently that from $125,000 to $150,000 will be spent on the line for betterments this year, including the building of a permanent steel structure to replace a wooden trestle put in when the line was constructed in 1910-11 to the west coast. A good deal of the money will be expended on the Alberni Branch.

Plans are reported to have ben filed at Ottawa for a swing bridge across the inner harbor at Victoria, B.C., to carry tracks into the Store St. station. The structure proposed to be erected is the steel bridge formerly carrying the C.P.R. across the Red River at Winnipeg, and now stored at Coquitlam. (Mar., pg. 100.)

Grand Trunk Pacific Ry.—The Board of Railway Commissioners, on Mar. 14, gave a decision as to the location of the station at Prince George, B.C. The matter has been at issue since 1912 between the company and rival real estate agents, who each claimed to have the "only and original location."

The Minister of Public Works is being asked to approve of site of and plan for a lumber mill and other works to be erected in front of Waterfront Block I, Prince Rupert Harbor, B.C. (Feb., pg. 51.)

Grand Trunk Ry.—We are officially advised that plans for the proposed freight sheds at Mimico, Ont., are before the Board of Railway Commissioners. (Mar., pg. 50.)

Great Northern Ry.—F. L. Townley, architect in charge of the erection of the terminal station and other buildings on False Creek, Vancouver, B.C., is reported to have stated that 90% of the work on the station proper was completed, and it was expected to have it completed by Mar. 30. Work has been started on the locomotive house and other buildings. A car yard is being laid out about a quarter of a mile east of the passenger station. It will contain 4 tracks, each 1,500 ft. long, and will be piped for steam, compressed air, water and air brake testing lines, and provision will also be made for battery charging. (Mar., pg. 101.)

Greater Winnipeg Water District.—It it reported by the auditors that up to Dec. 31, 1916, out of $6,180,799.94 expended for all purposes, $1,595,666.23 was expended upon the commission's railway and its equipment.

The commission has adopted a recommendation of Chief Engineer Chace for the pipe line route between Deacon and the Red River. This is an air line route direct from Deacon to the Dawson Road, just east of the St. Boniface municipal yards. In connection with it, Mr. Chace reported that where considered solely as a pipe line route or from the standpoint of providing in addition a route for a permanent railway entrance to St. Boniface, this route is the cheapest and most satisfactory. A 100 ft. right of way will be provided the entire distance. (Jan., pg. 19.)

The Michigan Central Rd.'s station at Charing Cross, Ont., was totally destroyed by fire, Mar. 9. Arrangements are being made for rebuilding. (Mar., pg. 101.)

Montreal Central Terminal Co.—The Dominion Parliament is being asked to extend the time within which the company may build its terminal station, with railways, tunnels, and bridge connections in and around Montreal. F. E. Came, Montreal, is Secretary. (June, 1916, pg. 281.)

Pacific Great Eastern Ry.—Information as to the legislative investigation into the company's affairs is given on another page of this issue.

Construction work on the line is reported suspended for the present at least. (Mar., pg. 101.)

Prince Edward Island Ry. Car Ferry.—A press report from Charlottetown, P.E.I., states that it is expected that the car ferry service between Port Borden, P.E.I., and Cape Tormentine, N.B., will be inaugurated in August. (Feb., pg. 51.)

Saskatchewan & Hudson Bay Ry.—The Saskatchewan Legislature has incorporated a company with this title to build a railway commencing in Tp. 17 or 18, Range 30, West of the 3rd meridian, easterly through Tps. 16, 17 and 18 to Range 22 in either of these townships, thence northeasterly to Cahri, thence northerly and easterly to a point in either Tps. 27, 28, 29 or 30, in Ranges 11, 12, 13 or 14, thence northeasterly to Saskatoon. The capital is fixed at $100,000; and power is asked to issue bonds for $30,000 a mile. The office is to be in Regina. The provisional directors named are: H. Keeble, Haverhill, Sask.; L. L. Dawson, Regina, and F. Crandall, Calgary, Alta.

From the association of F. Crandall, it would appear that this railway is being incorporated to build the Saskatchewan section of a railway project covered by the charters of the Calgary & Fernie Ry. and the High River, Saskatchewan & Hudson Bay Ry., and extending from Fernie, B.C., to Fort Churchill, on Hudson Bay. (See Alberta-Hudson Bay Ry., Mar., pg. 101.)

St. John & Quebec Ry.—We are officially advised that a contract has been let to the Nova Scotia Construction Co. for building the section of this railway from the present northerly terminus at Centreville, N.B., to a connection with the C.P.R. at Andover, about 26 miles. Construction work will be started early in the spring.

F. W. Summer, President, St.J. & Q.R., is reported as stating, Mar. 10, that the Nova Scotia Construction Co. would start work on the new section of the line from Centreville to Andover as soon as weather conditions permit.

T. Cozollino, President of the N. S. Construction Co., is reported to have said, Mar. 10, that satisfactory progress had been made with construction on the southern section of the line from Georgetown to Westfield during the winter. A good deal of the heavier part of the work, including a considerable amount of bridge work, has been done. (Mar., pg. 101.)

St. Maurice Construction Co., Ltd.—The Shawinigan Water & Power Co.'s annual report for 1916 has the following reference to one of its subsidiaries: "During the past year the St. Maurice Construction Co., Ltd., a subsidiary of your company, has continued the construction on the La Loutre storage dam, and steady progress is reported on this work. During the early part of the year the work consisted in building 20 miles of railway, the organization of the river transportation system and the construction of the cofferdams in the east channel of the river. The concrete has now been placed in the east channel and work is proceeding on the west, or main channel. The work is up to schedule and should be completed at the end of 1917."

We are officially advised that the railway parallels the St. Maurice River for 20 miles, beginning at Chaudiere Falls, on the river bank, 30 miles above Weymontachine, or Weymont station, on the National Transcontinental Ry. The line is standard gauge. It is operated by locomotive burning fuel oil. There are four contractors' locomotives, 18 flat cars, two box cars and 24 dump cars. The contractors and engineers were the St. Maurice Construction Co., Ltd., with Fraser, Bryce & Co., Ltd., Montreal, as supervising engineers. The maximum grade is 3½%, and the maximum curvature 18 deg.

River transportation operates between Weymont, or as a matter of fact, from Sanmaur, which is the name of a station opened for the St. Maurice Construction Co.'s operations, two miles from Weymont, to the point on the river where the railway begins. The outfit consists of about 20 scows, with capacities of between 12 and 30 tons each. These are towed by gasoline and steam tow boats. At one point in the river it is so swift that an alligator boat is used to pull the scows up. The towing is in two divisions above and below this swift water. The railway and river systems are used only for the St. Maurice Construction Co.'s operations and business incidental to the construction of the dam.

We are further officially advised that it is impossible to state what will be the future of this railway, whether it will be taken up on the completion of the dam, or whether it will be made a permanent work and extended.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	$3,834,200	$2,636,800	$1,197,400	$ 711,000
Aug.	3,684,900	2,612,900	1,072,000	614,300
Sept.	3,187,900	2,455,300	732,600	x177,300
Oct.	3,716,800	2,496,500	1,220,300	x36,700
Nov.	3,722,300	2,472,300	1,250,000	38,600
Dec.	3,485,400	2,661,600	823,800	x378,300
Jan.	2,832,600	2,350,500	482,100	226,700
Feb.	2,358,600	2,250,400	108,200	x21,200
	$26,822,700	$19,936,300	$6,886,400	$ 977,100
Incr	$5,295,100	$4,318,000	$ 977,100	.....

Approximate earnings for three weeks ended Mar. 21, $2,126,400, against $1,627,200 for same period, 1916.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	$12,247,440.39	$8,230,348.66	$4,017,091.73	$1,216,688.61
Aug.	13,570,467.31	7,802,680.46	5,467,786.85	2,025,472.13
Sept.	12,134,159.96	7,004,400.80	5,129,759.16	384,458.52
Oct.	13,237,086.36	7,562,346.99	5,674,739.37	x904,694.78
Nov.	13,401,943.90	7,837,983.76	5,563,960.14	x790,452.89
Dec.	12,426,867.44	7,405,438.83	5,021,428.61	x278,806.01
Jan.	10,158,307.86	7,726,829.36	2,431,478.50	341,070.27
	$86,876,273.22	$53,570,028.86	$33,306,244.36	$1,591,648.99
Inc.	$11,817,283.34	$10,225,634.35	$1,591,648.99	.....

Approximate earnings for Feb., $8,832,000, and for three weeks ended Mar. 21, $7,760,000 against $8,546,000 and $6,737,000 for same periods, 1916.

Grand Trunk Railway Earnings.

The aggregate traffic receipts of the system from Jan. 1 to Feb. 28, are:

	1917	1916	Increase	Decrease
G.T.R. . .	$6,825,821	$6,437,336	$388,485	.....
G.T.W.R. ..	1,272,560	1,383,708	.....	$111,148
D.G.H.&M.R.	437,852	474,762	.....	36,910
	$8,536,233	$8,295,806	$240,427	.....

Approximate earnings for three weeks ended Mar. 21, $3,186,666, against $2,916,801 for same period, 1916.

Grand Trunk Pacific Ry. Earnings.

The approximate earnings of the Prairie Section, 916 miles, for January were $330,108; for Feb., $295,512; total, $625,620, against $314,344 for Jan.; $277,619 for Feb., and $591,963, total, for same periods, 1916.

Arthur R. Mosher was detained by the Montreal police, Mar. 24, charged with having written a libellous letter concerning R. P. Neil, President of the International Brotherhood of Stationmen and Railway Employes, to Chief of Police Campeau. Mosher gave bonds for $1,000 for his appearance in court, Mar. 26, but did not appear. On Mar. 27 Mosher's bail of $1,000, which was ordered confiscated the previous day, was restored, when he showed that he had attended at the wrong court room.

Frederick Broughton's Pictures—A collection of oil and water color paintings, formerly the property of the late Frederick Broughton, who was General Manager of the Great Western Ry. of Canada in the seventies, were sold by auction in Toronto recently.

The Chilled Iron Car Wheel.

By G. W. Lyndon, President, Association of Manufacturers of Chilled Car Wheels.

Following are the principal portions of a paper read before the Canadian Railway Club in Montreal recently:

The method of manufacturing chilled iron car wheels has not been materially changed and the pattern introduced in 1850 by Washburn is the same in outline practically as that in use today. Nevertheless the wheel manufacturers in the face of restriction in weight and flange dimensions, and through improved foundry processes have been successful in maintaining the chilled iron wheel up to a high standard. A 33 in. 525 lb. chilled iron wheel of the Washburn type became standard soon after 1850 for 10-ton freight cars and also for passenger cars. Cars of this capacity remained standard for about 30 years. As late as 1875 there were only occasional cars having a capacity as high as 12 tons. The heaviest capacity passenger cars weighed 18 tons. Sleeping and drawing room cars of 12 sections weighed 30 tons. The operation of railways then was very different from what it is now. Interchange of traffic as we now know it did not exist. An official of a great railway charged another with running freight trains as fast as 12 miles an hour. "The wear and tear is something terrible," said he. "It is pounding the track to pieces. Every ton of freight handled at that speed is carried at a loss. The reduction of speed to 8 miles an hour will lessen the cost more than $1,000 a day."

Such were the ideas of the foremost men in charge of transportation in the days of iron rails, hand brakes, link and pin couplers, fragile cars, etc. Under such conditions of light wheel loads, small flange pressures, slow speeds, low annual mileage, the wheels would last the entire life of the car. Wheel mileage obtained under such circumstances is sometimes erroneously used to indicate the superior service of wheels manufactured at that time. The ton mileage, which is the true basis for comparison, was extremely low as compared with wheel performance at the present time. The introduction of the air brake, the automatic safety coupler, heavy steel rails, more rigid cars and interchange of traffic have permitted an era of rapid transit of heavy capacity freight cars with time schedules almost equal to that of express trains. Daily runs averaging 30 miles an hour, including stops, with an occasional burst of speed as high as 50 to 60 miles an hour, to maintain the high average, is not uncommon.

The 30-ton car introduced in 1885 was the heaviest capacity car on any railway during 1893. It was strongly argued at that time that the wheel load of 11,000 lb. which was required under cars of 30 tons capacity was the maximum that could be carried on a 33-in. diameter wheel, because the area contact between the wheel and the rail being so small, any greater load would cause a permanent injury to both wheel and rail, by reason of the fact that the elastic limit in the metal would be exceeded, resulting in dents in the rail and flat spots in the wheel tread. Not only was 11,000 lb. a wheel considered the maximum wheel load, but there was a good deal of doubt expressed by the foremost engineers as to whether this load was not in excess of good practice. The introduction of the 30-ton car was very rapid on all railways. A chilled iron wheel weighing 600 lb. was used under cars of this capacity and was recommended as standard in 1904 by the M. C. B. Association. It was later modified and increased to 625 lb. in 1909, upon the recommendation of the Wheel Manufacturers' Association.

Notwithstanding the doubt expressed regarding the maximum wheel load, cars of 40 tons capacity were soon tried and found to be satisfactory and almost immediately thereafter the 50-ton car was developed for the coal carrying trade, and found to be so satisfactory that cars of lighter capacity ceased to be built for this service. The 700 lb. wheel was used under 50-ton cars and recommended as standard in 1904 by the M. C. B. Association, but afterwards, upon teh recommendation of the Manufacturers' Association, was modified to 725 lb., and made standard in 1909. It will be noticed that in 1904 the first wheel made standard for the 50-ton cars weighed 700 lbs. In 1909 the manufacturers succeeded in getting the weight increased 25 lb. During the time intervening a new wheel of the rolled steel type was introduced, and notwithstanding the alleged superiority of metal, the steel wheel substituted for the 700 lb. chilled iron wheel weighed a minimum of 750 lb. The present indications are that the 50-ton car is likely to be superseded in the very near future by the 70-ton car for carrying such commodities as coal, iron ore, etc. Cars of 70 tons capacity have already proved successful from every standpoint and are being made in comparatively large numbers.

The marvellous increase since 1875 in the capacity of cars and the tremendous tonnage hauled has called for an increase in the weight of the car structure from 18,000 to 65,000 lb., or a 260% increase; an increase in the weight of rail from 50 to 125 lb, or 150%; in the axle from 350 to 1,070 lb., or 200% increase; the weight of the wheel from 525 to 725 lb., or 38% increase. The percentage of increase in the wheel is much less than for any other part of the car, and while the carrying capacity has increased from 10 to 70 tons, or 600%, the weight of the heaviest M. C. B. standard wheel has increased only 38%. This is a wonderful record for the performance of the wheel under adverse conditions, when it is considered that not only has the carrying capacity been increased but the speeds at which trains are operated have increased 600%.

The ton miles per annum made by the present 70-ton car is approximately 20 times that of the 6-ton car, which indicates the greater service given by the present wheel than was secured from any wheel during the pioneer days. It also plainly shows that the mere comparison of mileage is of no value whatever unless the load carried is taken into consideration.

While the chilled iron wheel has always met increased requirements by reason of the rapid increase in the capacity of the cars, there is one part of the wheel that has received scant consideration, and that is the flange. During all the remarkable railway development, one dimension in track structure has remained constant. The space between the running rail and guard rail has remained fixed as 1¾ in. The chilled iron wheel manufacturers have been trying for years to secure a stronger flange and have demonstrated the fact that three-sixteenths of an inch can be added to the thickness of the present M. C. B. flange, compensation for the increase made in mounting each wheel 3/32 of an inch closer to the rail and still maintain the M. C. B. standard throat to back of flange dimension of 4 ft. 6 29/64 in. This ensures that the relation of the back of the flange to guard rail remains the same as at present and no change in track clearance is required. There can, therefore, be no objection from a track standpoint of making a liberal increase in the present flange thickness, and the manufacturers have received the approval of their plan from a special committee appointed for the purpose of investigation through the American Railway Engineering Association.

Under the 10-ton car, whose weight was about equal to its capacity, the load carried per wheel was approximately 5,000 lb., which would require about 4,000 lb. flange pressure to change the direction of the truck in engaging curves. Under the 70-ton car the load per wheel has increased to 25,000 lb., which requires almost 20,000 lb. flange pressure to change the direction of the truck, therefore, the flange thrust has increased 400% on account of the increased load, which is further augmented by the high speed of modern freight trains. Under present conditions of operation, considering the increased load and speed, the thrust on the flange, including impact, is at least 10 times greater than under the old 10-ton car, and it must be apparent that the increased duty has not been provided for.

The University of Illinois, under the direction of the consulting engineer for the Association of Manufacturers of Chilled Car Wheels, has been conducting a series of tests for the purpose of ascertaining the stresses to which the wheel is subjected in pressing the wheel on to the axle, and service conditions, with the following results: 1. When a wheel is pressed on an axle a compressive stress is developed radially and a tensile stress circumferencially. These stresses are of large proportion and extend all the way from the hub to the tread. 2. The plate must carry the load which produces a combination of stresses resulting in a wheel slightly elliptical. 3. On descending grades the heat generated by the brake shoe, which is a factor of load, grade and speed, causes a tensile stress in a radial direction in opposition to the compressive stress which was developed while pressing the wheel on the axle. 4. The heavy flange thrust causes a bending action in the plate, which intensifies the tensile stress developed by the heat in the front plate, and the compressive stress in the back plate developed while pressing on the axle. The ratio between these stresses developed in the 70-ton car as compared to the 10-ton car is much greater than that indicated by the mere increase in carrying capacity. The heaviest stress developed is probably that caused by the sudden rise in the temperature of the tread of the wheel from brake shoe application on descending grades. If we assume that trains are now operated at double the velocity they were 40 years ago and the load in the wheels five times as great, there will be 10 times the heat generated per unit of time on the

tread of the present wheel as compared to the wheel under the 10-ton car. Also the flange thrust being from 5 to 10 times greater indicates that we have 10 times the force to contend with than we formerly had.

The information obtained would indicate that in order to design a wheel that will fit a given condition of service, it requires a thorough understanding of the intensity of the stress in each part of the wheel and the relation of the stresses to service conditions. The manufacturers' association believes that due to the general conditions existing at the present time, and considering the safety factor of operation, three designs of wheels of 675, 750 and 850 lb. (with 3/16 in. increase in flange), respectively, for 30, 50 and 70-ton cars, would in a great measure solve present troubles and the recommendations are: 675 lb. wheels for cars having a maximum gross load of 112,000 lb.; 750 lb. wheels for cars having a maximum gross load of 161,000 lb.; 850 lb. wheels for cars having a maximum gross load of 210,000 lb.

No railway material sold today is so necessary for operation and comprehends so low an initial investment to the railways as the chilled iron wheel. The 8,000,000 tons of chilled iron wheels running today possess a higher relative market value when worn out, based upon their first cost, than is usual with other commodities purchased by the railroads. Hundreds of thousands of chilled iron wheels have been sold at a differential of $10 a ton, which represents the difference between the original selling price and the scrap value of the old worn out wheels, and this $10 a ton differential represents the cost of reconverting the old wheel into a new one plus the necessary labor, plus the price of the new material and the profit of the manufacturers. Special wheels are purchased by many railways at a higher differential than $10 a ton, and some foundries, located in remote parts of the country, far from raw materials, such as coke and pig iron, must receive a higher price. About 30% of all wheels sold are removed by foreign lines and the price paid for these removals is fixed by the printed interchange rules of the M. C. B. Association, as follows:

	Chilled Iron.	Steel.
New value, each	$9.00	$19.50
Scrap value, each	4.75	4.50
Net cost	$4.25	$15.00
Cost of removing from and replacing in trucks, per pair, $2.25 each	1.12	1.12
Cost under car, each	$5.37	$16.12
Cost of two turnings	....	3.25
Total cost of wheel service, each	$5.37	$19.37

The total cost for wheel service for other types of wheels is about four times that of the chilled iron wheel and upon this basis of comparison any substitute must yield four times the mileage or time service in order to equalize the cost. As the master car builders fix the price of removals on the 30% of equipment on foreign roads, it must follow that the same relative basis of cost applies on the 70% of removals on a road's own lines. Chilled iron wheels sold at a differential of $10 a ton, make the net cost of the three M. C. B. standards as follows:

625 lb. M. C. B. wheel for 30-ton cars, $3.12
675 lb. M. C. B. wheel for 40-ton cars, $3.37
725 lb. M. C. B. wheel for 50-ton cars, $3.62

The maximum cost of the 625 lb. M. C. B. wheel, guaranteed for 6 years, is 52c a year; that of the 675 lb. wheel, guaranteed for 5 years, is 67c a year; and that of the 725 lb. wheel, guaranteed for 4 years, is 90c a year. Any wheel that is sold for $20 will cost the railways, in interest charges alone, (at 5% per annum) more than the renewal charges of the chilled iron wheel, because while the guaranteed net cost to the railways is based upon six, five and four years service, respectively, the actual service is often twice as much.

Transportation Conference at Ottawa.

On Mar. 6, Sir Geo. E. Foster, Minister of Trade and Commerce, wrote a number of leading railway and steamship officials as follows: "The problem of transport for the current year is a very serious and complex one for the whole of this continent, and is by no means any less pressing and important for Canada. There is a great quantity of western grain to be moved from the interior and the head of the lakes and across the Atlantic, which should be cleared out before the next crop ripens. The St. Lawrence and our Canadian ports should, under all the circumstances, be able to command a large portion of this traffic, and the ocean tonnage to be provided by the allied governments for carrying munitions, war supplies and foodstuffs should be made to help in this direction. United action and thorough co-operation on the part of all our transport agencies would contribute greatly to the end desired, and it has been suggested that a conference of these various agencies would be advisable and helpful. Acting on that suggestion, I have invited them to meet in Ottawa on Mar. 19 for an interchange of views on the above mentioned subject. I would be glad, therefore, if you would kindly send a representative of your ocmpany to attend this meeting, the object of which will be generally to exchange views and consider what steps can be taken to ensure the greatest possible movement of grain and other commodities from Canadian ports, and to facilitate and speed up this movement."

In response to the invitation, a number of prominent officials of the Canadian Pacific, Grand Trunk, Canadian Northern, Canadian Government and other steam railways, of the Canada Steamship Lines, Ltd., and other steamship companies, and of the St. John, N.B., Quebec and Montreal harbor authorities, attended at Ottawa and were received by the Ministers of Trade and Commerce, of Customs, and of Railways. As the Ministers had to leave to attend a memorial service for the Duchess of Connaught, the meeting was turned over to Sir Henry Drayton, Chief Railway Commissioner, who took the chair, and there was considerable discussion but no definite conclusions were arrived at and no committees were appointed.

The Minister of Trade and Commerce states that the representatives present were asked to work along the following lines: To see that the grain remaining in the northwest is brought down to the head of the lakes speedily. This duty rests upon the railways and they state that they are quite able to accomplish it with speed and efficiency. The next step is between the Great Lakes and Montreal ,and the information is that Canadian lake shippers have tonnage sufficient and will find no difficulty in moving the grain from Fort William to the bay ports and Montreal, if the railways will co-operate across Ontario with dispatch and efficiency and prevent delays at the bay ports and transfer elevators. The railways chiefly interested in that operation are the Canadian Pacific and Grand Trunk, and these two companies are asked to make such arrangements as will quickly lift from the bay port elevators the grain which is brought down across the lakes and run it into Montreal and possibly Quebec. There is not very much prospect of a large portion of grain being taken down from Port Colborne to the St. Lawrence, owing to the scarcity of canal boats, but whatever can will be done in this direction. The facilities at Montreal are first class and steps are being taken for such co-operation as will ensure a large output from that port, quite as much, it is thought, as transport across the ocean can be obtained for carrying away. Greater difficulty will be experienced in reference to the coal supply, and investigation is being made as to how the output of the Nova Scotia mines and the transportation system of the St. Lawrence can best be facilitated. This latter is a very hard proposition at the present time.

Ontario Railway and Municipal Board Act Amendments.

The Ontario Legislature has before it a bill amending the Ontario Railway and Municipal Board Act. The amendments provide for giving the board jurisdiction over all incline railways in the province; provides that the Chairman shall receive a salary of $7,000 a year, the Vice Chairman $4,500 a year, and the Secretary $2,800 a year; the increased salaries of the Chairman and Secretary to date from Oct. 31, 1916.

A new section, to be numbered 38a, is added, providing for a penalty not exceeding $1,000 in addition "to any other penalty provided in this or any other act" for contravention of the board's orders and in default of payment there is an alternative of imprisonment for not exceeding 30 days. Subsection 2 declares that each successive day during which such act or omission continues is a separate offence; subsection 3 deals with the manner of imposing the penalties, and subsection 4 provides that sheriffs and other police officers shall assist in enforcing the board's orders.

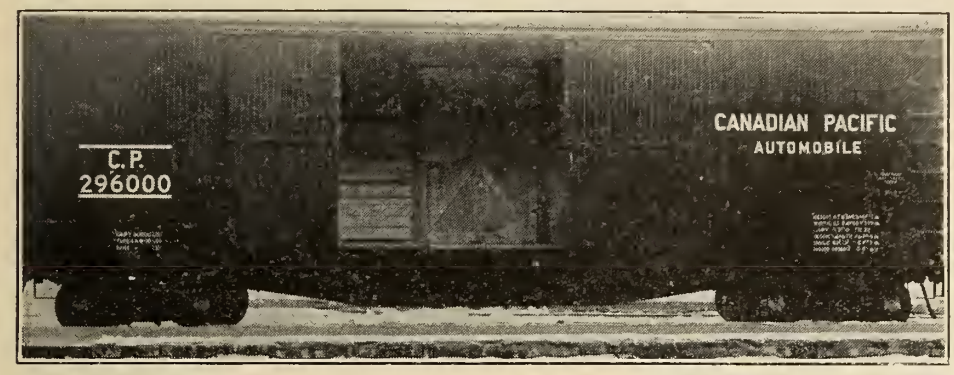
Canadian Society of Civil Engineers Secretaryship.—Prof. C. H. McLeod, who has been Secretary for nearly 30 years, having resigned, has been succeeded by Fraser S. Keith, B.A.Sc., A.M.Can.Soc. C.E., who was born at Smiths Falls, Ont., June 8, 1878. After an apprenticeship in the hardware business, he entered the Faculty of Applied Science, McGill University, Montreal, in 1899, spent his summer holidays at machine shop work, electric power plant operation, etc., and graduated with honors in electrical engineering in 1903, his summer thesis winning the Can.Soc.C.E.'s mechanical section's prize. In 1904 he was senior electrical demonstrator at McGill University, and in 1905 he went into technical newspaper editorial work. In 1908 he went to Vancouver and engaged in manufacturing concrete materials and in concrete construction. He returned to Montreal in 1915, since when, until his recent appointment, he was again engaged in technical newspaper work.

Faculty of Applied Science, Toronto University.—It is officially announced that 765 men have enlisted for overseas service, including 16 members of the staff. Seventy-five have been wounded, 45 killed and 38 have received military honors.

Double Deck Automobile Cars, Canadian Pacific Railway.

The accompanying illustrations show the first of a series of automobile cars, built at the company's Angus shops, Montreal, and which are said to be the first double deck auomobile cars built or owned in Canada. Their principal dimensions, etc., are as follows:

Height at eaves	14 ft. 1 in.
Width at eaves	9 ft. 9 in.
Inside length	40 ft. 6 in.
Inside width	8 ft. 7 in.
Inside height	9 ft. 6 in.
Inside space	3,300 cu. ft.
Capacity	80,000 lb.
Tare	44,900 lb.



Double deck Automobile Car, C.P.R.

Canadian Society of Civil Engineers.—Members in British Columbia discussed with members of the provincial government recently matters affecting the status of civil engineers. R. W. McIntyre, past Chairman of the Victoria branch, and D. O. Lewis, District Engineer, Canadian Northern Ry., presented the case for the engineers, and the Premier promised to give the matter consideration.

Freight and Passenger Traffic Notes.

The G.T.R. announces that Acton West station, on its Toronto-Guelph line, has been renamed Acton, to conform to the post office name.

The Great Northern Ry. was reported, Mar. 14, to be arranging to operate a through train service between Vancouver and Nelson, B.C., via Hope and Oroville, Wash.

The G.T.R. has issued a booklet, "Ottawa, Canada's Seat of Government," for circulation in the United States and elsewhere for the promoting of tourist traffic to that city.

The Canadian Northern Ry. started operating a train service over its Lulu Island Branch, Mar. 7. One train a day is being operated each way between Steveston and Queensboro, B.C.

From a comparatively small catch a few years ago the shipments of halibut from Prince Rupert, B.C., over the Grand Trunk Pacific Ry. to Canadian and United States points have grown to about 15,000,000 lb. a year.

The Canadian Northern Ry. is operating two freight trains a day from Vancouver to eastern points, while the westbound requires only one. Each of the three trains comprises 15 cars.

In order to aid in securing labor for farmers in the west, Canadian railways put in operation, Mar. 1, a 1c a mile rate from all points on the United States border in Canada and west of Ontario.

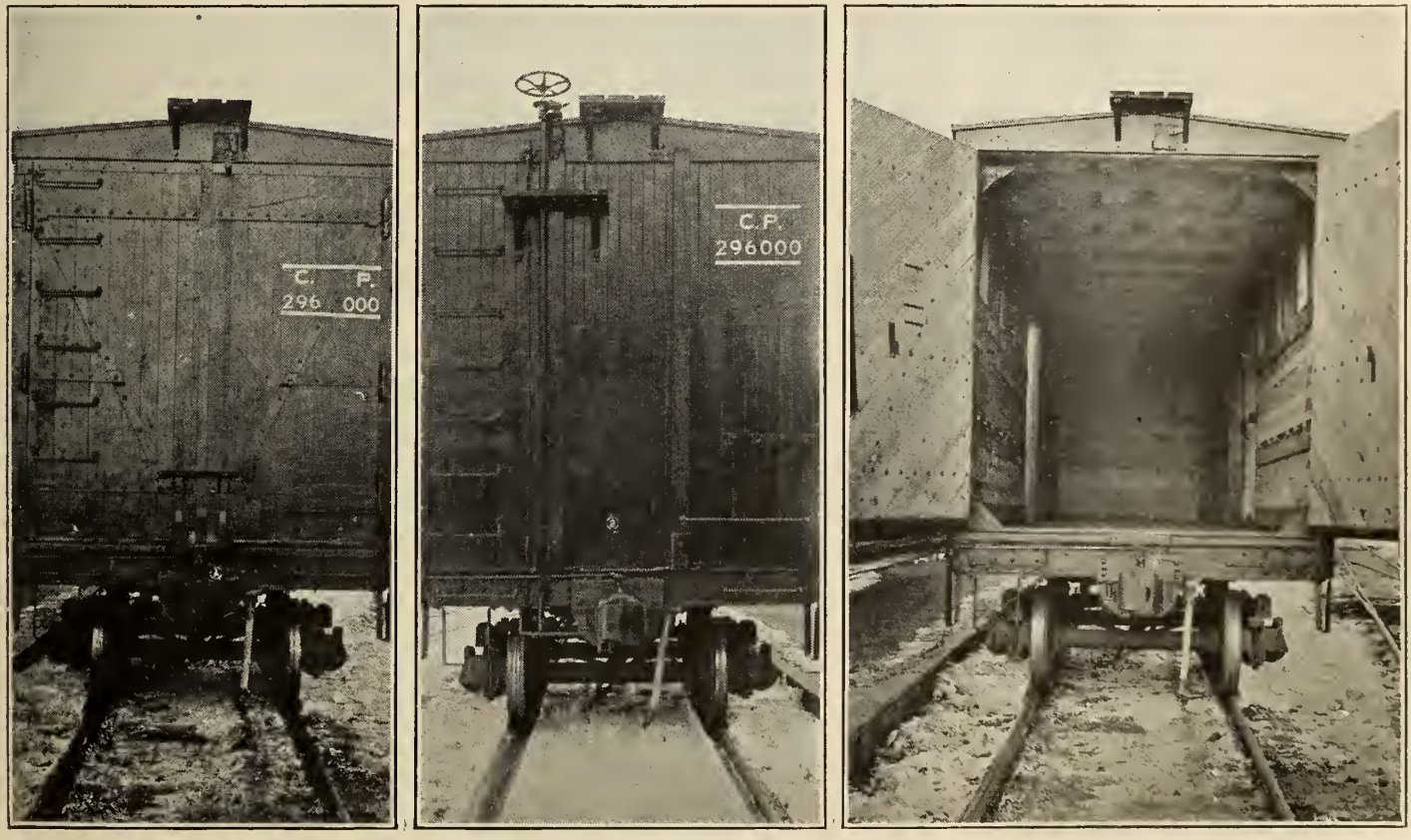
Owing to the necessity of relieving the freight situation, Canadian railways, upon the suggestion of the Board of Railway Commissioners, will not grant any reduced fares nor operate any special trains for the Easter holiday traffic.

M. McD. Duff. Manager, C.P.R. Great Lakes Steamships, has completed a tour of the C.P.R. system in connection with a general plan to promote travel during the navigation season by the rail and lake route rather than by the all rail route.

The G.T.R. has issued a new form of commutation ticket. Instead of a strip of detachable coupons for 10 trips, or a book for the 55 trips, the new ticket has a series of numbers printed along the side, one of which the conductor will punch out on each trip.

The Department of Railways has authorized the fitting up of a car for the exhibition of moving pictures dealing with the grave dangers of taking unnecessary chances in the performance of railway work. The car will travel over the Canadian Government Railways and lectures will be given as part of the safety first campaign.

The Premier of Saskatchewan, on Mar. 13, promised to consider the question of the appointment of a traffic expert, which was urged by a deputation representing the boards of trade of the province. He stated it might be sufficient to secure one expert to look after the interests of Manitoba, Saskatchewan and Alberta.



Double Deck Automobile Car, Canadian Pacific Railway

C.P.R. trains on the Prescott Subdivision now leave from and arrive at Central station, instead of Broad St. station. Ottawa passengers arriving at either of these stations, and being ticketed through to points necessitating their going to the other station, are given street car transfer between Central and Broad St. stations and their baggage is transferred free.

C. E. McPherson, Assistant Passenger Traffic Manager, Western Lines, C.P.R., Winnipeg, visited San Francisco and Los Angeles recently, to arrange accommodation for meeting the large number of United States tourists visiting California, who will return over C.P.R. lines from Seattle and Vancouver, crossing the Canadian Rockies and the western prairies to Winnipeg, thence to their homes in Chicago, New York, Boston and other eastern points.

C.P.R. Prescott Subdivision trains now leave from and arrive at Central Station, Ottawa, instead of Broad St. Station. Passengers between points reached through Ottawa Broad St. Station and points on or reached via the Prescott Subdivision are directed by conductor to the ticket office at Ottawa station on arrival and are furnished with street car transfers between the Central and Broad St. stations and their baggage is transferred free of charge.

The G.T.R. has filed with the Board of Railway Commissioners its answer to the application of the City of Hamilton for an order directing the company to restore the passenger service between Hamilton and Burlington Beach. The company claims there is no contractual obligation to give this service, and that inasmuch as trains have not been operated over it for years, it would be unreasonable to expect the G.T.R. to provide a regular train service. The Hamilton Radial Ry. is able to provide for all the traffic except some occasional traffic during the summer.

Sunday school and other organizations which have been in the habit of promoting railway excursions during the summer have been notified that all negotiations for the running of special picnic trains have been withdrawn. The circular says: "As you are doubtless aware, all railways in Canada have been requested by the Board of Railway Commissioners to take every possible means of conserving motive power to facilitate freight train movements. At present, in conformity with the board's request, we cannot move any special or extra passenger train, and we have also considerably curtailed our regular passenger train service."

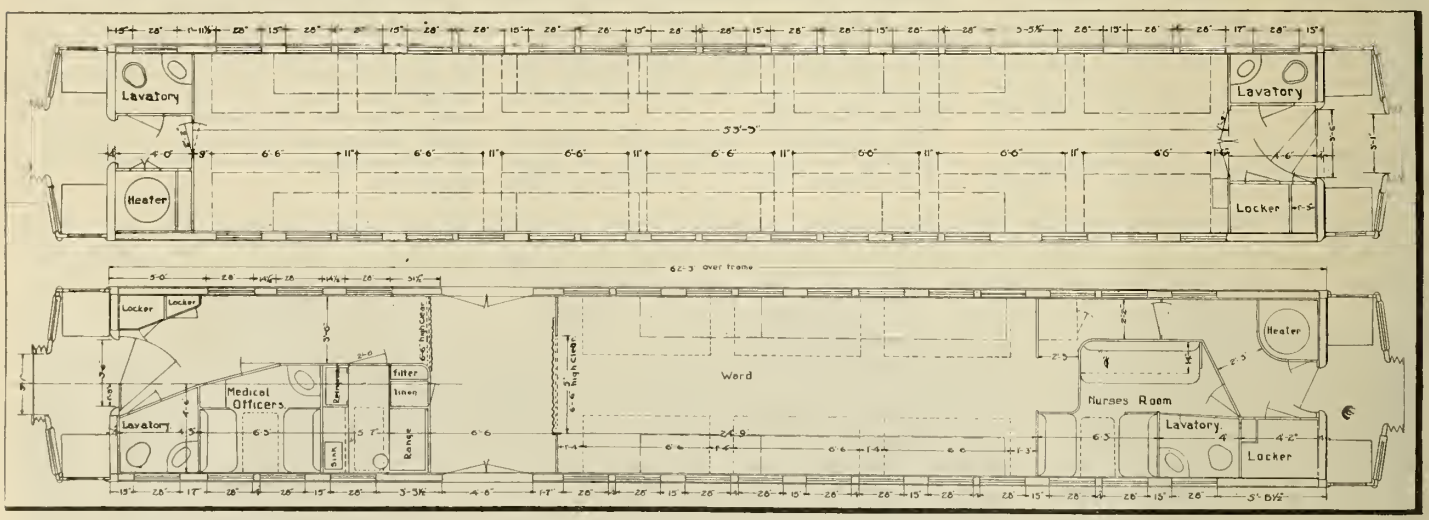
The Ocean Limited, running between Moncton, N.B., and Montreal, has been withdrawn, the last train running Mar. 4. This step has been taken to facilitate the movement of freight. In consequence of this the following other changes of trains has been made on the Intercolonial Ry.: "Trains Nos. 199 and 200 run between Halifax and Moncton daily except Sunday. The Maritime Express runs through between Halifax and Montreal daily. In order to make close connections from Sydney with Maritime Express (westbound), train 6 leaves Sydney and intermediate stations to Truro one hour earlier than heretofore. Trains 41 and 42 are restored to schedule Mar. 5. The following branch line trains connectins with nos. 199 and 200 trains are discontinued: 207, Loggieville to Newcastle; 208, Newcastle to Loggieville; 225, Dalhousie to Dalhousie Jct.; 226, Dalhousie Jct. to Dalhousie."

Increased Freight Rates in U. S. Asked. Washington press dispatch, Mar. 27.—A petition to be permitted to increase freight rates on a percentage plan was filed by a committee of railway presidents with the Interstate Commerce Commission today. The formal petition was filed on behalf of all the railways operating east of the Mississippi River and north of the Ohio and Potomac Rivers. A telegram was also filed, signed by 20 presidents of western railways, setting forth that they concurred in the petition, and stating that the western roads would file a similar petition at once. It is expected that the railways in the southeast will also file separate and similar petitions. The railways want the new tariff effective within 30 days.

The American Railway Engineering Association had a most successful annual convention at Chicago, Mar. 20 to 22. The following officers were elected for the current year: President, J. G. Sullivan, Chief Engineer, Western Lines, C.P.R.; First Vice President, C. A. Morse, Chief Engineer and Chairman Valuation Committee, Chicago, Rock Island & Pacific Ry.; Second Vice President, Earl Stimson, Engineer Maintenance of Way, Baltimore & Ohio Rd.; Secretary, E. H. Fritch; Treasurer, G. H. Bremner, District Engineer, Interstate Commerce Commission.

Canadian Pacific Railway Hospital Cars for Military Service.

The C.P.R. is remodelling eight tourist cars for the Military Hospitals Commission's service in removing wounded and invalid soldiers from the seaboard to their destinations. Four of these cars will be composite, including kitchen and accommodation for medical officer and nurses, and four will be straight ward cars. The cars will be run in pairs, one composite and one ward car. Patients for the ward cars will be taken on and off through the side door entrance of the composite car, and to facilitate this movement, the end doors have been increased to 3½ ft. wide at one end of each car only. The cars have six-wheel trucks, steel platforms and double sash, and are in general conformity with the standard construction of first class tourist cars. The illustration on this page shows plan views of the ward and composite cars respectively. The ward cars have accommodation for 14 patients, and composite cars are arranged with six cots in addition to quqarters for medical officers and nurses. The accommodation for the nurses is equivalent to that of a drawing room on a standard sleeping car, and is upholstered in leather. The kitchen accommodation is of the same type as is provided on the standard tourist sleeping car. The medical officers' quarters are arranged in a compartment with upper and lower berths and there is a small dispensary to each car so arranged. The ward cars consist of one large room the length of a standard sleeper, with lavatories at each end. The floors are covered with linoleum and the aisles are carpeted. The composite cars have two side entrances in addition to the usual one, these being utilized for the reception of patients, and the entrances are so arranged that heavy curtains can be drawn closely in bad weather, affording ample protection to patients already in the cars. The cars are lettered on the outside with the words Military Hospital, with a large red cross in the centre.



Hospital Cars, Canadian Pacific Railway, for Military Service.

Loss by Forest Fires on Timiskaming & Northern Ontario Ry.—In connection with the forest fires in Northern Ontario about July 29, 1916, it is announced that the loss sustained by the T. & N.O.R. Commission was $112,261.25, in addition to 109 freight cars, 94 of these being foreign and 15 T. & N.O.R. The insurance recoverable is $61,336.97.

Railway Rolling Stock Notes.

The Canadian Northern Ry. has received a snow plough, no. 7338, from its Winnipeg shops.

The C.P.R. has received 89 box cars and 1 automobile furniture car from its Angus shops, Montreal.

The Dominion Steel Foundry Co. has received 1 Columbia (2-4-2) switching locomotive from Canadian Locomotive Co.

The Algoma Eastern Ry. purchased recently 1 ten wheel, and 4 consolidation locomotives from Chicago Great Western Ry.

The Timiskaming & Northern Ontario Ry. will be in the market shortly for a small number of box cars, details for which are under consideration.

The Dominion Government is reported to have purchased 13 locomotives, which were used by contractors on the Welland Ship Canal, for shipment to France for war purposes.

The Canadian Car & Foundry Co. has completed delivery of an order for 1,500 high sided gondola cars, and 500 sets of steel work for same, for the Paris & Orleans Ry., France. Details of these have been given in previous issues.

Recent advices announced that the Algoma Eastern Ry. was contemplating buying some steel ore cars of a special type, but we are now officially advised that the management does not contemplate purchasing any steel cars.

The C.P.R. has ordered the following additions to rolling stock to be built at its Angus shops, Montreal: 6 freight refrigerator cars, 36 steel underframe box cars, 40 tons capacity, 1 automobile furniture car, 7 vans and 2 steel underframe flat cars, 40 tons capacity.

The Toronto, Hamilton & Buffalo Ry. has ordered 4 six wheel switching locomotives from Canadian Locomotive Co. Following are the chief details:

Weight in working order, drivers	166,000 lbs.
Wheel base, rigid	11½ ft.
Wheel base, engine and tender	45 ft. 4½ ins.
Heating surface, firebox and arch tubes	142 sq. ft.
Heating surface, tubes	1879 sq. ft.
Heating surface, total	2021 sq. ft.
Driving wheels, diar.	51 ins.
Driving wheel centres	Cast steel
Driving journals	9 by 12 ins.
Cylinders, diar. and stroke	21 by 28 ins.
Boiler, type	Radial stayed
Boiler pressure	180 lbs.
Tubes, no. and diar.	165-2 ins.; 22-5½ ins.
Tubes, length	16 ft.
Brakes	Westinghouse American
Packing	King metallic
Superheater	Locomotive Superheater Co.'s Type A
Fire door	Franklin butterfly type
Brick arch	American Arch Co.
Valve Motion	Walschaerts
Reverse gear	Casey-Cavin power type
Weight of tender, loaded	110,000 lbs.
Water capacity	5,500 galls.
Coal capacity	8 tons
Tank, type	U shape, steel coal gate
Truck, type	Arch bar
Wheels	Solid steel 33 ins.
Journals	5 by 9 ins.
Brake beams	Buffalo
Axle boxes	McCord

The Russian Government has ordered from the Canadian Car & Foundry Co. 2,000 four-wheeled box cars, 5 ft. gauge, each of 1,200 poods (approximately 43,-200 lbs.) capacity. Of these, 1,600 will have cabs, and 400 will be without cabs. The design of these cars is after the style of the regular continental type, with buffers, screw couplings and semi-elliptic bearing springs, resting on journal boxes and connected by means of brackets through shackles to the side sills. The wheels are to be of chilled cast iron, 39⅜ in. diar, on the tread line. They will be equipped with air and hand brakes, with four brake beams to each car. The Russian Government has 3,000 similar cars on order with the Eastern Car Co., mention of which was made in our last issue. Following are the chief details:

Length over buffers, without cab	26 ft. 10½ ins.
Length over buffers, with cab	28 ft. 10¾ ins.
Length over end sill, without cab	22 ft., 11⅝ ins.
Length over end sill, with cab	24 ft. 11 5/16 ins.
Wheel centres, without cab	12 ft. 9⅞ ins.
Wheel centres, with cab	13 ft. 1½ ins.
Height of buffer	3 ft. 4¾ ins. from rail
Screw coupling centre	3 ft. 4¾ ins. from rail
Height over all	12 ft. 5 5/16 ins.
Extreme width	9 ft. 8 ins.
Height inside	7 ft. 8½ ins.
Width inside	9 ft.
Length inside	22 ft. 9 ins.
Width over roof	9 ft. 8 ins.

Following are chief details of the 10 Mikado (2-8-2) locomotives, which the G.T.R. has ordered from Canadian Locomotive Co., and of 5 similar locomotives ordered from the American Locomotive Co.:—

Weight in working order on drivers	205,000 lbs.
Weight in working order, total	276,000 lbs.
Wheel base of engine, rigid	16 ft. 6 ins.
Wheel base of engine, total	35 ft. 1 in.
Wheel base, engine and tender	67 ft. 7¾ ins.
Heating surface, firebox and arch tubes	235 sq. ft.
Heating surface, tubes	3,413 sq. ft.
Heating surface, total	3,648 sq. ft.
Driving wheels, diar.	63 ins.
Driving wheel centres	Cast steel
Driving journals, diar. and length	Main 11 by 20, others 10 by 12 ins.
Cylinders, diar. and stroke	27 by 30 ins.
Boiler, type	Radial stayed
Boiler pressure	175 lbs.
Tubes, no. and diar.	228-2 ins., 32-5⅜ ins.
Tubes, length	20 ft.
Brakes	Westinghouse American
Packing	King Metallic
Superheater	Locomotive Superheater Co.'s Type A
Fire door	Franklin butterfly type
Brick arch	American Arch Co.
Reverse gear	Casey-Cavin power type
Weight of tender loaded	166,000 lbs.
Water capacity	7,500 galls.
Coal capacity	12 tons
Tank, type	Hopper bottom
Truck, type	Pedestal with equalizer
Wheel, diar.	Solid steel, 33 ins.
Journals	6 by 11 ins.
Brake beam	Buffalo
Axle boxes	McCord

Railway Finance, Meetings, Etc.

Guelph Jct. Ry.—The Guelph, Ont., City Auditor reported to the City Council, Mar. 1, that the profits from the G.J.R. for 1916 were $40,147.58, or $4,-387.50 in excess of the estimate.

Pere Marquette Rd.—The rights resting in the junior security holders of this railway were sold under orders of the court in the receivership proceedings, Mar. 16, for $10,300,000 to Cox & Phillips, New York, trustees for the reorganization managers. The rights are covered by the consolidated and refunding mortgages of the line. The property of the company includes the Lake Erie & Detroit River Ry. in Canada, together with a contract with the Michigan Central Rd. for running rights from St. Thomas, Ont., to Buffalo, N.Y.

Timiskaming & Northern Ontario Ry.—Passenger earnings for Jan., $44,-958.79; freight earnings, $101,717.52; total earnings, $146,676.31, against $35,-015.60, passenger earnings; $111,096.65, freight earnings; $146,112.25, total earnings, for Jan., 1916 .

In his budget speech in the Ontario Legislature recently the Provincial Treasurer said: "We have got $1,000,000 from the T. & N.O.R., of which $528,000 is net profit, and $400,000 profit and loss account."

Investigation into Pacific Great Eastern Railway Affairs.

The British Columbia Legislature has appointed a special committee to investigate all matters connected with the financing of this company from its inception in 1912. The Premier, in moving the resolution, Mar. 12, traced the whole course of the legislation affecting the company's incorporation, the guaranteeing of its bonds and the payments made by the government to the company from time to time. He is reported to have said: "We put auditors on the company's accounts and they report that the company received $5,704,000 more than it was entitled to. . . . Chief Engineer Gamble has reported to me that to complete the road from North Vancouver to Fort George there is required in addition to the amount paid out, and the amount of the loan paid over, approximately $10,779,000."

The Premier laid before the legislature, Mar. 12, the report of the auditors, Price, Waterhouse & Co., on the financial relations between the government and the company to which he had referred in his speech, Mar. 10. The report shows that the total securities guaranteed by the province amounted to $20,160,000, equal to $42,000 a mile. The purchase price of the old Howe Sound & Northern Ry., extending from Squamish towards Pemberton Meadows, was $193,068.62. After a very lengthy examination of the accounts, the auditors, in conclusion, state that the company received from the govment $5,704,316.50 more than it was entitled to, according to the auditors' interpretation of the acts as confirmed by the Attorney General's Department.

The special committee met Mar 15, and organized with J. W. deB. Ferris, of Vancouver, as chairman. Among the counsel engaged are: S. S. Taylor, K.C., for the government; H. A. Maclean, K.C., for the company, and E. P. Davis, for P. Welch, the general contractor.

Toronto Express Delivery and Collection Limits.

In the recent application of Toronto for an extension of the free collection and delivery area for express companies. D'Arcy Scott, Assistant Chief Commissioner, Board of Railway Commissioners, delivered judgment, Mar. 27, extending the free area to include the sections south of St. Clair Ave., known as Wychwood and Bracondale, on both sides of the streets. Beyond that a pick up and delivery system for a toll, to be arranged from time to time, is established. This latter zone should be at any place within half a mile from the nearest free zone limit, except the southern limit, which is bounded by the water front, beyond which there should be no delivery, even for a toll. The minimum charge for picking up and delivering one or more parcels in one consignment aggregating not over 100 lbs., to be 15 cents; over 100 lbs. and not exceeding 200 lbs., 25 cents, and so on, adding 10 cents for each additional 100 lbs. or fraction thereof. Persons outside the free area, not desiring to have parcels delivered to notify the companies, otherwise the companies may exercise their powers under the Railway Act for the collection of tolls. The companies shall not be bound to deliver parcels beyond the free zone unless the thoroughfares are reasonably passable for express wagons. An order will be issued on these lines effective May 1.

Canadian Pacific Ry. Construction, Betterments, Etc.

Eastern Lines.—The appropriations for the year provide for 445 miles of ballasting, the putting in of 1,517,790 new ties, the provision of 175,000 rail anchors, and the replacing of 400,000 tie plates.

New Brunswick District.—The appropriations for the year provide for: Six stall locomotive house extension, new cinder pit, 40,000 gal. tank and standpipe at Bay Shore, St. John; 60,000 gal. tank, standpipe, etc., at Jackson; and 40,000 gal. tank with standpipes at Holeb.

Algonquin Hotel, St. Andrews, N.B.—portion of the fourth story is being remodelled to provide 16 additional guest rooms, with 10 bathrooms and 2 private lavatories. A new dormitory building, 126 x 30 ft., for the hotel servants is under construction directly opposite the power house. It is to be finished in stucco and half timber, with a covered verandah, 68 x 10 ft., facing the street. The building will contain a common or lounge room, 16 x 28 ft., on the ground floor, 31 cubicles, each accommodating 2 men; eight rooms for married couples and superior staff, with a separate entrance at one end, and baths and lavatories on each floor. The building will accommodate 78 people, and will cost $24,000.

Quebec District.—The appropriations for the year provide for new outbound freight shed, repairs to inbound freight shed, new platforms and other work at Sherbrooke; 2-track coaling plant, sand house, etc., and cinder pit at Farnham; electric interlocker at Montreal West; umbrella roof at Place Viger, Montreal; extension to locomotive house and other work at Glen yard; extension to block signals at St. Therese; umbrella roof, additional trackwork and other work at Quebec station; completion of diversion at Meath, Ont.; 7-stall extension to locomotive house, 200 ton coaling plant, sand house, ash pit, 65,000 gal. tank and some additional track at Smiths Falls.

Ontario District.—The appropriations for the year provide for: Automatic signals at Glen Tay and Agincourt; new freight shed at Belleville; new superstructure bridge, 107.2, McTier Subdivision; rearrangement of West Toronto and Lambton freight yards; extension to freight shed at West Toronto; additional office accommodation over present station at London; rebuilding London St. bridge, Windsor.

A press report states that C.P.R. engineers have made surveys and are making tests at the crossing of the macadamized road in Galt, with a view to building a subway under the railway tracks.

We are officially advised that all plans for building of a second track between North Toronto and Leaside have been filed, both with the city and the county authorities, and that application has been made to the Board of Railway Commissioners for their approval.

Western Lines.—The appropriations for the year provide for a large amount of ballasting and ditching; the supply of 375,576 tie plates, 313,600 rail anchors and 1,688,788 ties.

Manitoba District.—The appropriations for the year provide for extension of yards, including additional tracks to locomotive house, new sand and ash pit at Ignace, Ont.; new coaling plant and ash pit at Brandon, Man.

Tenders are under consideration for the construction of a small stream tunnel near Keewatin, Ont., and for the construction of 6 section houses and 4 frame stations at various points on the Manitoba Division.

Saskatchewan District.—The appropriations for the year provide for new express building, including extension to freight shed, at Regina.

Tenders are under consideration for six no. 4 section houses; nine A2 stations; extending a freight shed by 192 ft.; deepening reservoir approximately 250 x 700 ft., and for a diversion of Frenchman's River in three places.

British Columbia District.—The appropriations for this year provide for: Automatic signals at Glacier; new ice house and extension of yards at Okanagan; extension of Pier D., dredging and masonry walls, Vancouver. This work is already in progress, the pile driving being well advanced. The pier will be doubled in length and will be made 15 ft. wider, and when completed will berth five large vessels. As soon as Pier D. is finished preparations will be made for starting Pier B. The growth of the fruit traffic has necessitated the building of a new ice house of 3,500 tons capacity at Okanagan. The work to be done on the division will also include some small terminal extensions at Smelter and a new station at Field.

The walls of the general waiting room at the C. P. R., Vancouver station, have been beautified by a completed series of mural paintings of the most striking mountain views to be seen from the line between Calgary and the coast. They are the work of Mrs. A. Langford, and taken in order from the north-west corner westward, are: Mount Stephen and Kicking Horse River, as seen from Field; Lake Louise, as seen from Chateau Lake Louise; the Falls at Banff; Mount Temple, as seen from the main line near Lake Louise; Banff, under the light of an evening sky; Mount Agnes and the other lakes in the clouds; the creek leading to Moraine Lake in the Valley of the Ten Peaks; the Beehive, as seen from the Lake Louise station trail; the Gap; the Three Sisters; Mount Wapta with Summit Lake; Castle Mountain; The Crowsnest; the Lions, from Vancouver Golf Links; Cathedral Mountain; Mount Regis,

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Aerial Service for Prince Edward Island.—A Charlottetown press dispatch says that a branch of the Aerial League's Canadian Division has been organized there, with F. W. Hyndman as President, and that a committee was appointed to promote the organization of an aeroplane company to manufacture machines and conduct an aerial service between the Island and the mainland, so as to provide constant daily communication in winter as well as summer.

Railway Lands Patented.—Letters patent were issued during February, respecting Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres.
Calgary & Edmonton Ry.	2,716.54
Canadian Northern Alberta Ry.	14.70
Canadian Northern Ry.	160.00
Canadian Pacific Ry. grants	8.51
Canadian Pacific Ry. roadbed and station grounds	6.80
Edmonton, Dunvegan & British Columbia Ry.	24.70
Grand Trunk Pacific Ry.	7.62
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.	9,436.44
Total	12,375.31

Contractors' Suit Respecting C.P.R. Yard Construction.

John Marsch, contractor, Chicago, Ill., has entered suit in a British Columbia court against Foley Bros., Foley, Welch & Stewart, and the C.P.R. to recover $285,627 for work done, etc. The plaintiff was a sub-contractor for the laying out of a freight clearing yard between the Kenora and the Lac du Bonnet subdivisions of the C.P.R., for which the Foley firms had the general contract, the work done including the Transcona yards. The contract was entered into May, 1912, provision being made for certain unit prices and for payment of 90% of the sum earned in cash month by month. It was agreed that the general contractor was to complete and deliver 28 miles of completed track and one of the humps, requiring 850,000 cu. yds. of train fill to be removed, by Sept. 1, 1912. Foley, Welch & Stewart also agreed in certain letters to pay all charges to the C.P.R. for pilot services. Work to the extent of $562,586 was admitted as being satisfactorily done, including the removal of 2,061,080 yards of train fill for $474,048 and the laying of over 95 miles of track. Altogether Marsch received $573,387 from Foley, Welch & Stewart, but the latter firm disputes liability for payment of additional charges for work done amounting to $285,627. Only a portion of this claim is made against the C.P.R., and then only because it was a consenting party to the contract between Foley, Welch & Stewart and Marsch. It is charged that in making up the final certificate, the C.P.R.'s Chief Engineer failed to exercise independent judgment and was prevented from doing so by the various defendants, and that the certificate was issued in collusion with them.

Grain Inspection at Western Points.

The following figures compiled by the Department of Trade and Commerce, show the number of cars of grain inspected on railways at Winnipeg and other points on the Western Division, for February, and for six months ended Feb. 28, compared with those inspected for six months ended Feb. 29, 1916.

	Feb.1917.	6 months to Feb.1917.	6 months to Feb.1917.
C.P.R.	4,199	75,856	115,070
C.P.R., Calgary	976	4,654	3,285
C.N.R.	3,098	39,482	58,695
G.N.R., Duluth	533	1,404	3,116
G.T.P.R.	739	14,823	29,471
Totals	9,545	136,219	209,637

Workmen's Compensation on Timiskaming & Northern Ontario Ry.—During 1916, 75 claims were registered on the books and submitted to the Workmen's Compensation Board for adjustment. Of these, 38 were passed and paid, 26 were disallowed and 11 were kept in abeyance. The 38 claims paid amounted to $3,476.15, an average of $91.48. The insurance cost for the year, based on premium paid in 1915, would amount to $17,224.10, or an average premium of $454.27, to protect an average award of $91.48.

The Institution of Civil Engineers Council has invited any of the Canadian Society of Civil Engineers members, who may be visiting England, to use the Institution's library and reading rooms in London, as well as attend its meetings. A letter of introduction from the Canadian Society of Civil Engineers will be necessary.

Canadian Northern Railway Construction, Betterments, Etc.

Mount Royal Tunnel & Terminal Co.—The Board of Railway Commissioners has authorized the company to build its railway temporarily, for not exceeding five years, from Feb. 26, 1917, across Cote de Liesse Road, between St. Laurent Parish and Mount Royal.

It is reported that a single track has been laid through the tunnel in order to take in material for the building of the temporary station and other work which is now in progress. When the station building is finished, which it is expected will be by the autumn, a second track will, it is said, be laid to care for the traffic. Buildings are being torn down now for the erection of the temporary station, which will be placed in the block bounded by Cathcart, St. Monique, Lagauchetiere and Mansfield Sts. The entrance to the temporary station will be on Lagauchetiere St., and the building will be used as an express building when the whole scheme has been completed. When the work has been entirely finished the station premises will extend from Lagauchetiere to Cathcart Sts,, and will, it is said, be roofed over in such a way that it will be possible to erect houses on the roof. It will be much like the subway stations in New York.

Western Lines.—M. H. MacLeod, General Manager and Chief Engineer, is reported to have stated that as soon as the weather conditions are favorable work will be started on the erection of the new station at Fort William, Ont. The new building, which will be erected a little to the north of the present station, will be similar to the Port Arthur one, and its probable cost is reported at about $50,000.

We are officially advised that there is no foundation for a recent press report that the company is about to build a new locomotive house at Rainy River, Ont.

The Board of Railway Commissioners is being asked to approve plan of the proposed new main freight line, general layout, of new subway on Water St., and approach to Red River bridge at Winnipeg. The City of Winnipeg is interested as it has expended $80,000 in putting in the substructure for a new bridge at Provencher Ave. The matter was discussed at a meeting of the council's works and property committee, Mar. 14, when it was said there is now just enough room for the city's street to run under the C.N.R. approach and reach the bridge at an altitude which renders it reasonably secure from floods. If the C.N.R. is allowed to cross the street further east, either the grade on to the bridge from the subway will be so steep that it will render the bridge valueless as far as Winnipeg is concerned, or the two first spans will be so low that high water will flood it and might easily carry the spans out. There appears to be only one other solution—the raising of the C.N.R. bridge approach.

A press report states that the plans for the electrification of the company's line to Victoria Beach will not be carried out this year. It is said they provide for connecting up the line with the Winnipeg Electric Ry. in East Kildonan.

M. H. MacLeod, General Manager and Chief Engineer, on his return to Winnipeg from Toronto, Mar. 19, is reported to have said the question of building new lines in the west was not brought up when the estimates for the year's work were under consideration. There is little likelihood of any new construction being started this year. Some improvements will be made at Grand Beach to meet public demands.

We have ben advised that the grading on the line from Oliver to St. Paul de Metis, Alta., which is being built under guarantee of bonds by the Alberta Government, has been completed for 100 miles. Track has been laid for about 18 miles to the first crossing of the Saskatchewan River, and it is expected to lay track on the balance of the 100 miles graded this year if the rails can be secured. This line is being built under the charter of the Canadian Northern Western Ry., which was declared to be a work for the general advantage of Canada, from Mar. 1. As projected the line will be continued easterly to the Alberta-Saskatchewan boundary line, where it will be connected with a line now under construction northerly and westerly from North Battleford, Sask.

Another C.N.W.R. branch line is under construction from Onoway, for which the Government has guaranteed the bonds for $20,000 a mile for 100 miles. The Premier stated recently in the Alberta Legislature, that in 1913 grading was done on 73.9 miles of this line and steel laid on 32.3 miles; in 1914, a considerable amount of bridge work was done, and in 1915 an additional 1.53 miles of track were laid, the line being in operation to Sangudo, near the end of steel.

C. L. Hall, contractor's engineer in charge of the foundation work for the C.N.R. station on the False Creek flats, Vancouver, is reported to have said that over 2,000 of the 2,500 piles have been driven and two-thirds of the concerte mass has been placed on the top of the piles. The piles are being driven in groups, averaging about 35 in a group; each group is enclosed in a wooden caisson, as the water level in False Creek is almost up to the ground flood. The next step in the preparation of the foundation is the excavation around the piles and inside the caisson. Then the piles are cut off to the proper height and concrete is spread over the top, this concrete forming the base on which the columns of the building will rest.

The company's contract with the City of Vancouver calls for the completion of the terminal station, the sea wall, terminal trackage, tunnel under Mount Pleasant and a 250-room hotel by Feb. 5, 1918. The Mayor is reported to have said, Mar. 1, that the declaration of the C. N. Pacific Ry. to be a work for the general advantage of Canada does not affect this agreement, and would not interfere with the city's action in endeavoring to have pressure brought to bear upon the company to fulfil its agreements. Sir William Mackenzie, on his recent visit to Victoria, had made a suggestion as to an extension of time for the completion of the work, but the council, said the mayor, were not inclined at present to grant any.

The clearing of the track on the Lulu Island Branch has been completed and a train service has been started, connection being made with the British Columbia Electric Ry. at Ewen Ave.

On his recent visit to Victoria, Sir William Mackenzie is reported to have applied to the Provincial Government for an increase of subsidy on account of the uncompleted mileage of authorized lines on Vancouver Island. The legislature authorized the guaranteeing of bonds for $35,000 a mile for 250 miles of railway on the island; in addition to this the legislature also guaranteed bonds in respect of the construction of 145 miles of branch lines on the mainland, upon which construction has not yet been started.

The complete operation of the line from Patricia Bay to Victoria is expected at an early date, and it is also expected to lay track from Victoria to Alberni this year if rails can be obtained.

For the terminals in Victoria plans have been filed showing a 26½ acre area on the Songhees Indian reserve, and it is reported that the company has been advised to submit an offer to the government for the purchase of this site.

A. Angstrom, naval architect, was at Patricia Bay recently inspecting the car ferry terminals, now nearly completed, in connection with the preparation of plans for the building of another car ferry. (Mar., pg. 104.)

New England Lake and Rail Case.

The Interstate Commerce Commission gave a decision, Feb. 12, re Tariff I.C.C. 146, issued by C. J. Pierce, Manager, National Despatch-Great Eastern Line, Boston, Mass., to become effective July 15, 1916, which proposed to increase certain rates, rail lake and rail, and rail and lake, via the G.T.R. and the Northwestern Steamship Co., formerly known as the Port Huron & Duluth Steamship Co., from certain points in New York and New England to Duluth and St. Paul, Minn., and points taking the same or related rates. The order is as follows:

By order dated July 11, 1916, the commission entered upon a hearing concerning the propriety of the increases and the lawfulness of the rates, charges, regulations, practices stated in Agent C. J. Pierce's tariff I.C.C. 146, and on Oct. 19, 1916, ordered that the operation of said schedules be suspended until May 12, 1917.

A full investigation of the matters and things involved has been had, and the commission order that the carriers respondent herein be required to cancel said tariff on or before May 11, 1917, in so far as it proposes new rates on granite from stations on the Central Vermont Ry. and Montpelier & Wells River Rd. to points taking Duluth or St. Paul rates; that the carriers respondent herein be required to cancel said tariff on or before May 11, 1917, in so far as it proposes increased rates on ammunition and cartridges, and that the orders heretofore entered in this proceeding suspending the operation of said tariff, except in so far as it proposes rates which the carriers respondent are hereby directed to cancel, be vacated and set aside as of May 11, 1917, and that this proceeding be discontinued.

Maximum Length of Trains.—The Board of Railway Commissioners has decided that under existing conditions it would not be justified in fixing a maximum length for freight trains. The commission on its own motion took up the question and heard the views of the railways and railway employes. Commissioner McLean, in giving judgment, holds that during the war the expeditious movement of freight should be the first consideration. When the war is over the question of regulating the length of trains will be taken up again.

Traffic Orders by Board of Railway Commissioners.

Pig Lead, Spelter and Antimony Rates.

25894, Feb. 22. Re complaint of Consolidated Mining & Smelting Co. of Smelter, B.C., against increase by C.P.R. of rate on pig lead, spelter and antimony, from Smelter to eastern points; and order 24968, May 6, 1916, suspending item 20A on page 2 of Supplement 13 to C.P.R. Tariff C.R.C. no. W. 2110. Upon the report and recommendation of the Chief Traffic Officer of the board, no objection to the rescission of order 24968 having been filed by the applicant, and rates being now provided in Tariff C.R.C. no. W. 2190, it is order that order 24968 be rescinded.

Rates on Copper Commodities.

25897. Feb. 22. Re application of Consolidated Mining & Smelting Co. of Smelter, B.C., for suspension of proposed cancellation of rates on copper commodities to points in eastern Canada; and order 25082, June 17, 1916, suspending the proposed cancellation. Upon the report and recommendation of the Chief Traffic Officer of the board, no objection having been filed by the applicant company to the suspension order being lifted, and rates being now provided in C.P.R. Tariff C.R.C. no. W. 2190, it is ordered that order 25082, suspending proposed cancellation of rates on copper commodities from Smelter, Grand Forks and Greenwood, B.C., to points in Eastern Canada, as shown in C.P.R. Tariff C.R.C. no. W. 2147, effective June 15, 1916, and requiring the C.P.R. to continue in force the rates on the said commodities to points in Eastern Canada as contained in its Tariff C.R.C. no. W. 2056, until further order, be rescinded.

Essex Terminal Railway Tariffs.

25903. Re application of Essex Terminal Ry., under sec. 327 of the Railway Act, for approval of its Standard Freight Tariff C.R.C. no. 361, cancelling Standard Tariff C.R.C. no. 37, approved by order 10016, Mar. 30, 1910. Upon the report and recommendation of the Chief Traffiic Officer of the board, it is ordered that the company's Standard Tariff C. R. C. no. 361 be approved; and it is further ordered that order 10016, approving the company's Standard Freight Tariff C. R. C. 37, be rescinded.

Milling in Transit Arrangements at Montreal.

25904. Feb. 26. Re application of Montreal Board of Trade Transportation Bureau, on behalf of Dominion Flour Mills, Ogilvie Flour Mills, and St. Lawrence Flour Mills, for an order disallowing the portion of C.P.R. Supplement 33 to Tariff C.R.C. no. E. 1196, Supplement 6 to C.R.C. no. E. 3120, Supplement 1 to C.R.C. no. E. 3137, and Supplement 1 to C.R.C. no. E. 3214, cancelling milling-in-transit arrangements on grain milled at Montreal and reshipped to points on Canadian Government Railways, also to Halifax, N.S., for export: It is ordered as follows, pending judgment on the application, that the clause in the following C.P.R. schedules purporting to cancel on and after Mar. 3, the existing milling-in-transit arrangement at Montreal, with respect to destinations on the Canadian Government Railways, be suspended, viz.: Supplement 6 to C.R.C. no. E. 3120 and Supplement 33 to C.R.C. no. E. 1186; and that, commencing Mar. 10, there be added to the company's Tariff C.R.C. no. E. 3261, rates to Halifax, that with respect to the rates to St. John, N.B., therein shown, shall preserve the pre-existing relationship; and it is further ordered that Supplement 1 to company's Tariff C.R.C. no. E. 3137 and Supplement 1 to C.R.C. no. E. 3214, be suspended until and including Mar. 9.

Canadian Northern Passenger Tariff.

25944, Mar. 16. Approving application of Canadian Northern Ry. Co., under sec. 331 of the Railway Act, for approval of Supplement 1 to its Tariff C.R.C. no. W-1283, providing for a maximum passenger fare of 4c a mile west of Tannis, Alta.

Switching Dispute at Winnipeg.

25951, Mar. 19. Re dispute between Grand Trunk Pacific and Canadian Northern Railways regarding reparation claimed by G.T.P.R. on account of Canadian Northern interswitching to Canada Cement Co.'s spur, Winnipeg. Upon hearing the matter at Winnipeg, Mar. 16, in the presence of counsel for the railway companies, it is ordered that the same be dismissed.

Lining Cars for Flax Seed.

25956, Mar. 22. Re order 23894, June 22, 1915, disallowing conditions with respect to shipment of flax seed in bulk, effective Oct. 12, 1914; and the C.P.R. application for leave to charge $3 a car for lining cars for the carriage of flax seed. Upon hearing the matter at Winnipeg, Mar. 16, the Northwest Grain Dealers' Association and the Canadian Pacific, Canadian Northern, and Grand Trunk Pacific Railways being represented, and upon reading the protest filed by the Northwest Grain Dealers' Association against the said charge, it is ordered that the said railway companies be authorized to charge $3 a car for lining cars for carriage of flax seed in bulk, subject to conditions set out in order 23894.

Filing of Express Tariffs.

General order 183, Feb. 24. Re general order 14 (order 5117), July 30, 1908, and the application of the Express Traffic Association of Canada for an order providing that the same arrangement be accorded to the express companies: Upon reading what is filed by the Express Traffic Association of Canada, on behalf of express companies, and the report and recommendation of the Chief Traffic Officer of the Board, it is ordered that the arrangement whereby certain tariffs of freight or passenger tolls may be filed with the board by agents, other than officials of the companies, acting jointly for two or more railway companies, subject to the legislative authority of the Dominion Parliament, provided that the said joint agents be duly authorized to act for the several companies by power of attorney, as set forth in the said general order 14, be extended to express companies subject to the Board's jurisdiction.

Allowance for Grain Doors.

General order 184, Mar. 22. Re application of D. D. Campbell, of Winnipeg, for an order increasing the allowance for grain doors supplied by shippers to $1.50 for the lower door, and 75c for the upper part; also that the bill therefor, when agent, be accepted by him and credited on account of freight charges. Upon hearing the application at Winnipeg, Mar. 16, the Northwest Grain Growers' Association and the Canadian Pacific, Canadian Northern, and Grand Trunk Pacific Railways being represented, the applicant appearing in person, it is ordered that order 8860, Dec. 10, 1909, requiring that where shippers upon railways are compelled to furnish car doors to enable cars to be used for traffic, allowance therefor to such shippers be made upon the following basis: At and west of Fort William, lower car door, $1; upper car door, 50c; east of Fort William, upper or lower car door, each, 50c; be amended to provide that the allowance for grain doors be increased from $1 to $1.50 for the lower door and from 50c to 75c for the upper door, in all $4.50 a car, the said allowance to be made at and west of Port Arthur, Ont.

Canadian Northern Ry. Lake and Rail Rates.

The Assistant Chief Commissioner, D'Arcy Scott, gave the following judgment, Feb. 26, Commissioner McLean concurring: J. P. H. Stevenson, customs broker, Toronto, complains that while the C.N.R. has lake and rail rates from Orono and Yarker, noncompetitive points on the C.N.R. east of Toronto via lake boats from Toronto Port Arthur thence C.N.R. to western points, the company's Eastern Lines lake and rail tariff C.R.C. no. E 771, does not show any rates from Toronto, the point where the lake movement begins. The clause of the Railway Act known as the long and short haul clause is subsec. 3 of sec. 326, which reads in part as follows: "And greater tolls shall not be charged therein (in a special freight tariff) for a shorter than a longer distance over the same line in the same direction, if such shorter distance is included in the longer."

The tariff in question shows arbitraries from Port Arthur to the principal points west, to be added to the rates to Port Arthur in order to arrive at the through rates. The arbitraries are the local tariff rates of the C.N.R. Western Lines. The C.N.R. (Western Lines) is therefore a party to through lake and rail rates from Toronto, the other party being the steamship company, and this being so, under the clause of the Railway Act above quoted, which in my opinion applies in this case, the through rates from Toronto cannot be greater than the through rates from Orono, Yarker, and other C.N.R. points east via Toronto. It may be noted also that the tariff itself is a publication of the C.N.R. (Eastern Lines) and is filed with the board by that company.

Steam Railway Track Laid in 1916.—In an article on this subject appearing in Canadian Railway and Marine World for Feb., pg. 56, estimates of the track laid in 1916 were used in reference to the Alberta & Great Waterways Ry., the Central Canada Ry., and the Edmonton, Dunvegan & British Columbia Ry., crediting them with having laid 110.50 miles of new track, viz.: 40 miles, 1.96 miles and 68.60 miles respectively. We have now been officially advised of the exact new trackage laid, which is as follows: Alberta & Great Waterways Ry., mileage 174.20 to 202.12 in the direction of McMurray, 27.92 miles. Central Canada Ry., to Peace River Crossing, 1 mile, and an industrial spur of 0.63 of a mile. Edmonton, Dunvegan & British Columbia Ry., Spirit River to Grande Prairie (Grande Prairie Branch), 50.2 miles; main line mileage 334.7 to 356.9, or 22.2 miles; total 72.6 miles. This makes a total of new main and branch line track of 101.32 miles and 0.63 of a mile of a spur track. This reduces the total mileage of new track laid in Canada in 1916 from 285.94 miles to 276.76 miles.

Mainly About Railway People Throughout Canada.

Mrs. Webster, wife of James Webster, President and General Manager, Caraquet Ry., died at her home in Toronto, Mar. 20.

David Pottinger, I. S. O., who was General Manager of the Intercolonial Ry. for many years, is visiting Toronto, accompanied by Mrs. Pottinger.

M. J. MacAndrew, Road Foreman of Locomotives, Michigan Central Rd., St. Thomas, Ont., died suddenly, while on duty, at Victoria Park, Ont., Mar. 19.

Lord Shaughnessy was announced to address the Royal Colonial Institute in England on April 3, on Canada, but circumstances have made it impossible for him to go overseas at present.

F. Ronaldson, Master Mechanic, Ontario District, C.P.R., Toronto, had an arm broken and a shoulder injured, when a portion of a C.P.R. eastbound train left the rails near Belleville, Ont., Mar. 6.

Sir John Kennedy, Consulting Engineer, Montreal Harbor Commission, and **Hiram A. Calvin**, formerly a Kingston, Ont., ship owner, have been elected fellows of the Royal Colonial Institute.

W. Woollatt, Vice President and General Manager, Essex Terminal Ry., Walkerville, Ont., has been appointed a member of the Provincial Resources Committee, constituted under the Ontario Legislature's authority.

Sir Henry Drayton, Chief Commissioner, Board of Railway Commissioners, has been elected President of the Ottawa Vacant Lots Association, and has given $500 to be distributed by the association in prizes.

T. F. Savage, who has been appointed Special Agent, Guelph Jct. Ry., Guelph, Ont., was for 47 years with the Great Western Ry., the G.T.R. and C.P.R., and retired under the C.P.R. pension rules, Jan. 1. He will look after the solicitation of traffic in Guelph and points west to Goderich.

Alexander Avery, whose appointment as Livestock Agent, Canadian Northern Ry., Winnipeg, was announced in our last issue, was born at Sharbot Lake, Ont., May 30, 1880, and from May 1902 to Oct. 16, 1916, was station agent at various points, latterly for the C.N.R. at Arcola, Sask.

H. A. Woods, Assistant Chief Engineer, Grand Trunk Pacific Ry., Winnipeg, who, as mentioned in Canadian Railway and Marine World for February, was granted leave of absence for three months, and who, it was reported, would resign on the expiration of his leave, is at Mountain Lakes, N.J., with his family.

George Bury, Vice President, C.P.R., who left Montreal on Jan. 23 for England, whence he accompanied Lord Milner on a mission to Russia, was still in Petrograd early in March, and up to Mar. 22 no information had been received at C.P.R. headquarters in Montreal as to his movements. It is expected that he will return to Canada via London.

F. M. Black, who has been appointed one of the Public Utility Commissioners for Alberta, in place of the late John Stocks, has been connected with P. Burns & Co., Calgary, Alta., for the past 15 years, latterly as Treasurer. He was President of the Calgary Board of Trade for the past year, and also served on Alberta Red Cross Society's finance committee.

G. A. Delacherois, whose appointment as Roadmaster, Shuswap and Okanagan Subdivisions, British Columbia District, Revelstoke, was announced in our last issue, was from Dec. 1909 to June 1915, Resident Engineer, C.P.R., Saskatoon, Sask.; June 1915 to Feb. 1916, Resident Engineer, Regina, Sask.; Feb. 1916 to Feb. 1917, Resident Engineer, Winnipeg.

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M. K. McQuarrie
Engineer, Dominion Atlantic Railway

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D. J. England
Trainmaster, Canadian Pacific Railway, Calgary, Alta.

Frederick McDowell, who has been appointed Storekeeper, Canadian Northern Ry., Winnipeg, was born there, Oct. 22, 1883, and entered C.N.R. service, Nov. 5, 1902, since when he has been, to May 1, 1905, storeman; May 1, 1905 to July 1, 1908, shipper; July 1, 1908 to Aug. 1, 1912, store foreman; Aug. 1, 1912 to Mar. 1, 1917, General Foreman, all at Winnipeg.

Fred C. Jackson, a civil engineer on the Hudson Bay Ry., is reported to be the discoverer of the Flin-Flon Lake copper district, 650 miles northwest of Winnipeg. He had never been on a prospecting expedition before Oct., 1915, when he staked out the present Mandy claim. The Tonopah Mining Co. of Nevada bought the claim from him, agreeing to develop it and to give the original finder a 15% interest. There is said to be nearly $15,000,000 in chalcopyrite ore in sight.

Maurice B. Helston, who has been appointed Superintendent, District 4, Western Division, Canadian Northern Ry., Calgary, Alta., was born at Michigan City, Ind., Aug. 24, 1896, and entered railway service in 1885, since when he has been, to 1890, operator, Michigan Central Rd.; 1890 to 1898, dispatcher, same road; 1898 to 1909, dispatcher, and chief dispatcher, Northern Pacific Ry.; 1909 to 1914, chief dispatcher, Canadian Northern Ry.; 1914 to Feb. 1, 1917, Superintendent, Duluth, Winnipeg & Pacific Ry., Virginia, Minn.

J. G. Macklin, M.Can.Soc.C.E., for many years Engineer of the G.T.R. Midland Division, at Peterborough, Ont., died recently in England, where he had lived for some time. He was born in England and came to Canada as a young man. His first engineering experience here was on the construction of the cantilever bridge over the Niagara River, below the Falls. His last important engineering work was the planning and construction of the dam on the Richelieu River at Chambly, Que. He is survived by a son, Lieut. F. C. A. Macklin, of the Royal Engineers.

Donald John England, who has been appointed Terminal Trainmaster, C.P.R., Moose Jaw, Sask., was born at Glen Roy, Ont., July 23, 1880, and entered C.P.R. service, Sept. 6, 1903, since when he has been, to Oct. 21, 1905, switchman, Winnipeg; Oct. 21, 1905, to Apr. 1, 1906, Yard Foreman, Winnipeg; Apr. 1, 1906, to Nov. 27, 1907, Assistant Yardmaster, Winnipeg; Nov. 27, 1907, to Dec. 10, 1910, Night Yardmaster, Winnipeg; Dec. 10, 1910, to June 19, 1913, General Yardmaster, Winnipeg; June 19, 1913, to Apr. 5, 1916, Trainmaster, Winnipeg; Apr. 5, 1916, to Feb. 20, 1917, Trainmaster, Calgary, Alta.

Geo. H. Frost, founder and for many years publisher of the Engineering News, New York, died at Plainfield, N.J., recently of paralysis. He was born in Ontario and graduated from McGill University in 1860. He went to Chicago in 1863. He was a land surveyor, and for several years an engineer on the Chicago & Northwestern Rd. He founded the Engineering News in 1874 and published it until 1911. He was president of the Courier News Publishing Co. of Plainfield, and a member of the American and Canadian Societies of Civil Engineers and honorary member of engineering societies in several States.

Daniel Francis Coyle, whose appointment as Industrial Commissioner, Canadian Northern Ry., Toronto, was announced in our last issue, was born at Stayner, Ont., June 13, 1875, and entered railway service, Aug. 15, 1892, since when he has been, to Sept., 1896, stenographer, General Superintendent's office, Western Division, C.P.R., Wininpeg; Sept., 1896, to Aug. 15, 1901, private secretary to Manager, Western Lines, C.P.R., Winnipeg; Aug. 15, 1901, to Jan. 2, 1917, assistant to R. J. Mackenzie, who was in charge of the construction of all Canadian Northern Ry. lines west of the Great Lakes, for Mackenzie, Mann & Co., the general contractors.

Malcolm Keith McQuarrie, who was appointed Resident Engineer, Dominion Atlantic Ry., Kentville, N.S., recently, was born at Sault Ste. Marie, Ont., Aug. 17, 1884, and graduated from the University of Toronto in 1907. He entered C.P.R. service in 1905, and was, to 1908, transit man, Vancouver, B.C.; 1908 to 1909, Assistant Engineer revising location of the Alberni Branch, Esquimalt & Nanaimo Ry., Vancouver Island; 1909 to 1910, Engineer on construction, Hartford Jct. Branch, C.P.R., to Wellington Camp, B.C.; 1910, Assistant Engineer, Vancouver Terminals, C.P.R.; 1911 to 1916, Resident Engineer, Field to Kamloops, Revelstoke Division, C.P.R.

J. Harry Chown, whose appointment as Superintendent, Regina Division, Saskatchewan District, C.P.R., was announced in our last issue, was born at West Flamboro, Ont., Aug. 21, 1882, and entered C.P.R. service, Nov. 28, 1904, since when he has been, to Dec. 31, 1905, clerk in General Superintendent's office, Winnipeg; Jan. 1 to Dec. 16, 1906, chief clerk, Superintendent's office, Brandon, Man.; Dec. 16, 1906, to June 30, 1910, chief clerk, Superintendent's office, Kenora, Ont.; July 1, 1910, to June 17, 1912, chief clerk to General Superintendent, Moose Jaw, Sask.; June 17, 1912, to Feb. 28, 1914, Trainmaster, Kerrobert, Sask.; Mar. 1, 1914, to Jan. 25, 1917, Trainmaster, Moose Jaw, Sask.

Peter Siems, railway contractor, St. Paul, Minn., and founder of the Siems-Carey Co., died at Daytona, Fla., Mar. 3, aged 75. He was born in Holstein, Germany and emigrated to the United States in 1865, going to St. Paul in 1870. After laying out the public highways between Black Hills and Minneapolis, he entered railway contract work in 1884 with D. C. Shepherd and Co., which later became Shepherd, Siems & Co. In 1908 the company was reorganized under the name of Siems & Co., with Mr. Siems' sons as partners. He retired six years ago and F. W. Carey became identified with the concern. Last October this company concluded a contract to build 1,100 miles of railway for the Chinese Government. Mr. Carey is now in China as resident manager of the work.

Thos. B. Townsend, who died at Aldershot, Ont., Mar. 8, was born in England in 1834, and came to Canada in 1857. He was a civil engineer, and was for many years with the old Great Western Ry. of Canada. He had charge of the rebuilding of the Desjardins Canal bridge at Hamilton, which replaced the one destroyed in the serious accident many years ago. In 1860, he designed and supervised the building of a private car used by the then Prince of Wales, afterwards King Edward VII., during his tour in Canada. In 1872 he received an appointment in the Dominion Railway and Canals Department, and was engaged, principally on the Welland Canal, until 1881. A few years later he retired from professional work and farmed at Aldershot.

Thomas Francis Rahilly, who has been appointed Superintendent, Algoma Eastern Ry., Sudbury, Ont., was born at Dior-

J. G. Sullivan, M.Can.Soc.C.E.
Chief Engineer, Western Lines, C.P.R., and President, American Railway Engineering Association.

D. F. Coyle
Industrial Commissioner, Canadian Northern Ry.

ite, Mich., Oct. 6, 1892, and entered railway service, June 22, 1908, since when he has been, to July 20, 1908, section hand, Chicago & North Western Ry., Michigamme, Mich.; July 23, 1908, to May 11, 1913, freight clerk, Duluth, South Shore & Atlantic Ry., St. Ignace, Mich.; May 12 to Aug. 27, 1913, clerk in Audit Office, same road, Marquette, Mich.; Aug. 28 to Nov. 2, 1913, chief clerk to Yardmaster, Sault Terminals, same road, Sault Ste. Marie, Ont.; Nov. 3, 1913, to Nov. 30, 1914, clerk in Comptroller's Office, Algoma Central & Hudson Bay Ry. and Algoma Eastern Ry., Sault Ste. Marie, Ont.; Dec. 1, 1914, to Apr. 15, 1916, Travelling Auditor, same companies; Apr. 15 to Dec. 1, 1916, Trainmaster, A.C. & H.B.R., Sault Ste. Marie, Ont.; Dec. 1, 1916, to Mar. 1, 1917, Comptroller, Algoma Eastern Ry., Sudbury, Ont.

John G. Sullivan, M.Can.Soc.C.E., who been elected President, American Railway Engineering Association for the current year, was born at Bushnell's Basin, N.Y., Jan. 11, 1863, and graduated C.E. from Cornell University in June, 1888. He entered railway service in July, 1888, since when he has been, to Mar., 1889, rodman, Great Northern Ry.; Apr., 1889, to Aug., 1890, rodman, instrument man and assistant engineer, Spokane Falls & Northern Ry.; Aug., 1890, to May, 1893, Assistant Engineer, Great Northern Ry. coast lines; July, 1893, to Feb., 1894, Assistant Engineer, Alberta Ry. & Coal Co.; July to Oct., 1894, section foreman, Northern Pacific Ry.; Oct., 1894, to Apr., 1895, Locating Engineer, Butte Anaconda & Pacific Ry.; Apr. to Dec., 1895, Division Engineer, Kaslo & Slocan Ry.; Dec., 1895, to Feb., 1901, Locating and Reconnaissance Engineer, and Engineer in charge of construction, Columbia & Western Ry.; Feb., 1901, to Sept., 1905, Division Engineer of Construction, Western Lines, C.P.R.; Sept., 1905, to Feb., 1907, Assistant Chief Engineer, Panama Canal; Feb., 1907, to Sept. 15, 1908, Manager of Construction, Eastern Lines, C. P. R., Toronto; Sept. 15, 1908, to Jan. 1, 1911, Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal; Jan. 1 to Oct. 9, 1911, Asistant Chief Engineer, Western Lines, C.P.R., Winnipeg, and from the latter date, Chief Engineer, Western Lines, C.P.R., Winnipeg.

Guy Tombs, whose appointment as Assistant Freight Traffic Manager, Eastern Lines, Canadian Northern Ry., Montreal, was announced in our last issue, was born near Lachute, Que., Nov. 22, 1877, and entered transportation service in Sept., 1892, since when he has been, to Apr., 1895, junior import clerk, C.P.R., Montreal; Apr., 1895, to Aug., 1897, secretary to General Manager and Secretary, United Counties Ry., St. Hyacinthe, Que.; Sept., 1897, to May, 1899, chief clerk to Canadian Agent, Central Vermont Ry., Montreal; June, 1899, to June, 1900, rate clerk, Division Freight office, G.T.R., Montreal; June, 1900, to Apr., 1901, Travelling Freight Agent, Central Vermont Ry., St. Johns, Que., and St. Albans, Vt.; May, 1901, to Dec., 1903, General Freight and Passenger Agent, Great Northern Ry. of Canada, Quebec; in May, 1903, this road was acquired by Canadian Northern Ry. interests and the office removed to Montreal in Jan., 1904, and shortly afterwards the name was changed to Canadian Northern Quebec Ry., and the jurisdiction extended to cover the Quebec & Lake St. John Ry., Apr. 1, 1908; June, 1912, to Nov., 1916, General Freight Agent, Quebec Division, C.N.R., Montreal; Nov., 1916, to Feb., 1917, General Freight Agent, Eastern Lines, C.N.R., Montreal. From the inauguration of the Canadian Northern Steamships, Ltd., to the recent absorption of that company by the Cunard Steamship Co., he was also Montreal Representative, C.N.S., Ltd.

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Canadian Northern Railway Lines Brought Under Dominion Control.

By a proclamation issued Feb. 20, and appearing in a special issue of the Canada Gazette, Feb. 28, sub-sections 2, 3 and 4 of the act granting aid to the extent of $45,000,000 to the Canadian Northern Ry. System, passed in 1914, were declared to be in effect from and after Mar. 1. This brings into force the only part of the act which has not hitherto been in effect, and so brings within the Board of Railway Commissioners' jurisdiction the Canadian Northern Saskatchewan Ry., the Canadian Northern Western Ry. and the Canadian Northern Pacific Ry. lines by declaring them to be works for the general advantage of Canada. Sec. 15 of chap. 25 of the statutes of 1914 dealt with the various lines of the C.N.R. System which were not, at the time of the making of the agreement,, confirmed by the act, works for the general advantage of Canada. The first subsection of section 15 declared the C. N. Manitoba Ry., the Irondale, Bancroft & Ottawa Ry., the Marmora Ry. & Mining Co., and the Quebec & Lake St. John Ry., which had been built under Manitoba, Ontario and Quebec charters, respectively, to be works for the general advantage of Canada; subsec. 2 declared the C. N. Western Ry.· subsec. 3 declared the C. N. Saskatchewan Ry., and subsec. 4 declared the C. N. Pacific Ry. to be works for the general advantage of Canada, and subsec. 5 set out that the three latter subsections should become operative on the proclamation of the Governor in Council, upon a declaration by order in Council that the lines of the companies had been constructed and were being operated over.

The Saskatchewan Legislature, by chap. 11 of the statutes of 1912, as amended by chap. 11 of the statutes of 1913, arranged to guarantee the bonds of a railway to be incorporated under C.N.R. control, to build a number of branch lines in the province, and by chap. 43 of the statutes of 1912, did incorporate the C. N. Saskatchewan Ry. Under the provisions of these acts the Saskatchewan Government entered into a contract with the C. N. Saskatchewan Ry. to build the following lines: Luck Lake line, 35 miles; Wroxton westerly, 45 miles; Shellbrook westerly, 45 miles; Kipling to New Warren, 35 miles; Lampman northerly, 45 miles; Aylesbury westerly, 50 miles; a total of 225 miles. Surveys have been made for all these lines except that from Kipling to New Warren, and construction was proceeded with on the line from Wroxton westerly and the line from Aylesbury westerly. At the end of 1915, track had been laid for 41.01 miles on the line from Wroxeter and for 8.66 miles on the line from Aylesbury. The first of these two lines extends from Wroxeter, on the Rossburn branch, through Yorkville to Willowbrook, and the second starts from Aylesbury, on the Regina-Saskatoon line, but only the first named appears to be in operation.

The C. N. Western Ry. was incorporated by the Alberta Legislature in 1910, with power to build the Peace River branch, through Whitecourt and Grande Prairie, to the western boundary of the province; and a line northeasterly following the Saskatchewan River to the eastern boundary of the province, which is known as the St. Paul de Metis line, and some other lines. Under the provisions of an act to aid the construction of railways, the Alberta Government entered into a contract for the construction of certain of these lines. under a guarantee of bonds. In reply to a question in the Legislature recently, the Premier stated that 153.16 miles of the guaranteed lines were in operation; track had been laid on an additional 16 miles, and 161.2 miles further grading had been done.

The C. N. Pacific Ry. was incorporated by the British Columbia Legislature under agreement to build a railway, under guarantee of bonds, from the Alberta-B.C. boundary to Vancouver, 500 miles; a line of 100 miles from Victoria to Barkley Sound, and other lines as authorized by the Lieutenant Governor in Council. Section 8 of the agreement, which was confirmed by the act of incorporation, provides: "In consideration of the guarantee of the securities, the C.N.R. covenants that the C.N.P.R. will agree that the Lieutenant Governor in Council may make rates for the carrying of freight and passengers on the line within the province, having regard to the fact that freight may be shipped into or out of the province from or to other places in Canada," and concludes: "The C.N.R. undertakes that it will not, and that the Pacific Co. will not, bring or promote any appeal to the Railway Commissioners for Canada from any order made under and pursuant to this section, and in the event of any such appeal being brought by others, that the C.N.R. and the Pacific Co. will represent to the commission on such appeal that it is satisfied with the rates the subject of such appeal in so far as they have been established within the provisions of this section." The existence of this section in the agreement was used as an argument by the Premier in the House of Commons in 1912, upon which an amendment proposed by Sir Wilfrid Laurier to bring the whole system under Federal jurisdiction at that time was defeated and it was also used when a similar motion was made during the consideration of the act of 1914.

The Minister of Railways for British Columbia has referred the matter to the Provincial Attorney General for an opinion on the scope of the order, and the Dominion Government has been asked for a statement as to what the order is intended to cover. Pending the receipt of further information, the B. C. Government declines to make any statement on the matter.

The Railway Club of Edmonton, Alta., was organized at a meeting held there, Mar. 2, when the following officers were appointed: President, W. A. Brown, General Superintendent, Canadian Northern Ry.; Vice Presidents, J. A. MacGregor, Superintendent, C.P.R.; M. Walton, Superintendent, Grand Trunk Pacific Ry.; Secretary, J. H. Cummings, local representative, Baltimore & Ohio Rd. The purpose of the club is to enable men engaged in transportation work to get together for the exchange of ideas and to enable them to give fitting reception to prominent railway men visiting the city.

The Railway Y. M. C. A.—At a recent meeting of directors, the International Secretary requested on behalf of the National Council, the release of David Thomson, Secretary, Railway Y. M. C. A., Kenora, Ont., to organize a new department of work for returned soldiers.

Canadian Transportation Men, Engineers, Etc. in the War.

The 256th Overseas Railway Construction Battalion, which left Toronto Mar. 21, about 1,000 strong, on its way to an eastern training ground, under command of Lt. Col. W. A. McConnell, is composed largely of civil engineers, surveyors, contractors and railway construction men.

Railway Battalions Arrive.—It was officially announced in Ottawa, Feb. 28, that the 228th Railway Construction Battalion, St. John; the 257th Railway Construction Battalion, Toronto, Ottawa, and the Maritime Provinces; the 143rd Railway Construction Battalion, Victoria, and the 218th Railway Construction Battalion, Edmonton, had arrived safely in England.

Sections of Skilled Railway Employes—Canadian Railway and Marine World for February contained particulars about No. 1 Section Skilled Railway Employes, being recruited under Capt. A. H. Kendall, formerly Master Mechanic, C.P.R., Toronto. No. 2 section is now being organized under Capt. R. McKillop, formerly Superintendent, Laurentian Division, C.P.R., Montreal. Each section will consist of 3 officers and 266 other ranks, the headquarters in each case being at Montreal. They will comprise station agents, yardmasters, locomotive men, locomotive firemen, conductors, brakemen and locomotive house mechanics. Their duties in France will be to operate military trains, conveying troops, guns, munitions, supplies, etc., to the rail heads, and it is quite possible that they will be assigned to work on one of the permanent French railways. The extra working pay allowed ranges from 60c to $1 a day. All information can be obtained at the recruiting stations in Moncton, Quebec, Montreal, Ottawa, Toronto and Winnipeg. The companies are being filled up rapidly, and it is expected that they will go overseas at a very early date.

C.P.R.'s Contribution of Men.

The C.P.R. is credited with giving more men to the British Army than any other organization in Canada. On Jan. 1, 7,114 employes of the railway had enlisted, 176 had been killed and 415 had been wounded. In April, 1916, Lord Shaughnessy's elder son, Capt. the Hon. Alfred Shaughnessy, was killed in action, and his younger son, Capt. the Hon. W. J. Shaughnessy, is now overseas with the Irish Rangers from Montreal. Jas. McNaught, one of the company's solicitors in Montreal, was killed in action recently.

The company's western lines have done magnificently, 3,814 employes having enlisted, of whom 74 have been killed and 256 wounded. In the enlistments from the western lines, clerks head the list with a total of 778, Winnipeg shops are second with 362, the wipers are third with 287, firemen are fourth with 277, and brakemen are fifth, having 275. The police department has given 76 constables to the army. Many of these are veterans of other wars. The majority of them passed through the South African campaign and are winners of both the King's and Queen's medals.

Following is a classification of western lines employes who have enlisted: Surveyors, 1; assistant engineers, 2; resident engineers, 3; locomotive men, 41; locomotive firemen, 277; wipers, 287; conductors, 23; brakemen, 275; yardmen, 82; Winnipeg shops, 362; Ogden shops, 174; various shops, 293; clerks, 778; checkers, 122; porters, 179; foremen, 16; sectionmen, 113; janitors and cleaners, 11; hotel, 25; agents and operators, 161; constables, 76; British Columbia coast steamships, British Columbia lake and river service, 98; bridge and building men, 83; construction department, 32; miscellaneous, 300.

Personal Notes.

W. E. Wilford, Commissary Agent, C.P.R., Calgary, Alta, has enlisted for active military service.

Harold Brown, formerly Dock Agent, Grand Trunk Pacific Ry., Vancouver, who left there for England on Jan. 18, has received a commission in the Royal Engineers' Inland Water Service.

Capt. the Hon. W. J. Shaughnessy, younger and only surviving son of Lord Shaughnessy, has been transferred from the Irish Rangers of Montreal to the Canadian Corps Staff in France.

F. L. C. Bond, A.M.Can.Soc. C.E., Division Engineer, Eastern Lines, G.T.R., Montreal, is major in the 256th Overseas Railway Construction Battalion, which left Toronto, Mar. 21, on its way to an eastern training ground.

Lieut. F. G. English, Essex Regiment, reported missing on the Somme on Nov. 14, and now reported, through the Netherland Red Cross Society, as killed, was General Agent, Freight and Express Department, G.T.R., London, Eng.

Major D. D. Parker, in addressing the Canadian Society of Civil Engineers, electrical section, at Montreal, Mar. 15, on the co-operation of the engineer and the infantryman in trench warfare, exhibited a working model of a front line trench.

Lt. Col. J. J. Creelman, of the Canadian Artillery, son of the late A. R. Creelman, K.C., General Counsel and director, C.P.R., Montreal, was decorated with the Distinguished Service Order, by the King, at Buckingham Palace, Mar. 5.

Flight Lieut. T. S. G. Pepler, of Toronto, previously reported missing, Mar. 6, was on Mar. 27 reported killed. He was a graduate of the Faculty of Applied Science, Toronto University, and was an assistant engineer for the Toronto Harbor Board before enlisting.

Lt. Col. G. D. Fearman, Chief Accountant, Dominion Power & Transmission Co., Hamilton, Ont., who went overseas some time ago in command of a battalion, has been appointed to command the regimental depot of the first Central Ontario Battalion at Shorncliffe, Eng.

Major Jas. McGregor, formerly Superintending Engineer, Halifax Ocean Terminals, Canadian Government Railways, who went overseas with the 239th Battalion, Overseas Railway Construction Corps, C.E.F., is now in the 3rd Battalion, Canadian Railway Corps, his address being Army Post Office, London, England.

Lt. Col. F. M. McRobie, General Manager and Secretary, Canadian Transfer Co. Ltd., is in command of the 244th Kitchener's Own Overseas Battalion, C.E.F., which completed its training in Canada recently. Its headquarters were in Montreal, but it was recruited all over Canada, having had the same privilege in this respect as the Princess Patricia's.

Private Leo Clarke (acting corporal), who was awarded the Victoria Cross some time ago, and died in hospital before the award was announced, was for several years engaged in the Canadian Northern Ry. Survey Department at Toronto. The other officials of the company who have won distinction on the field are Major H. B. Harstone, formerly of Edmonton, Alta., having been given the D.S.O., and Corporal James Rodgers, of Winnipeg, being awarded the Military Cross.

Lieut. C. R. Needs, of the Aviation Service, who was killed overseas in an aeroplane, Feb. 27, was born at Bristol, Eng., Mar. 14, 1886. He entered Canadian Northern Ry. service as a draughtsman in Oct. 1910, became rod man April 1, 1911, and instrument man May 1, 1911, his work being on the Toronto-Ottawa line. On Aug. 14, 1911, he was appointed Resident Engineer on the Sudbury-Port Arthur line, leaving the service Nov. 21, 1913, when the work was completed. After the outbreak of war he was engaged for a time as inspector of munitions at Galt, Ont.

R. McKillop, heretofore Superintendent, Laurentian Division, C.P.R., Montreal, who has been appointed officer commanding No. 2 section, Skilled Railway Employes, with rank of captain, was born in Scotland, Dec. 26, 1884, and entered C.P.R. service, July 23, 1905, since when he was, to Feb. 9, 1915, Assistant Engineer and Chief Draughtsman, Engineering Department, Montreal; Feb. 5 to Dec. 13, 1915, Division Engineer, Eastern Division, Montreal; Dec. 13, 1915, to July, 1916, Superintendent, District 2, Atlantic Division, Woodstock, N.B.; July, 1916, to Feb., 1917, Superintendent, Laurentian Division, Quebec District, Montreal.

Brevet Lt. Col. Wm. Beaumont Anderson, of the Royal Canadian Engineers, who has been appointed a member of the Distinguished Service Order, is a son of Lt. Col. W. P. Anderson, C.M.G., Reserve of Officers, Chief Engineer, Marine and Fisheries Department, Ottawa. He was born Sept. 9, 1877, and graduated from the Royal Military College, Kingston, Ont., in 1897. After serving at Halifax, he was for some time General Staff Officer, with headquarters at Montreal. He is now A.Q.M.G., at the Canadian Corps headquarters in France. His father served in the Fenian raids in 1866 and 1870, and has the General Service Medal with two clasps.

E. W. Du Val, Superintendent, Saskatoon Division, Saskatchewan District, C.P.R., Saskatoon, who has been given leave of absence for overseas duty, and biographical information about whom was published in our last issue, after taking an officer's training course at Regina, for a has qualified as a lieutenant and has been appointed to take the Saskatchewan University draft overseas, to reinforce the University Battalion in France. He is now at Saskatoon, enlisting, equipping and training the draft, and will probably go overseas in May. He has two brothers overseas, one in England after being wounded, the other on the Bulgarian front, having gone in from Salonica.

Sapper Wm. Reece (504,225), of Vancouver, of the 12th Field Company, Canadian Engineers, 4th Canadian Division, British Expeditionary Force, who was reported in the casualty lists of Mar. 10 as having been killed in action, was one of the party of seven who volunteered, on the night of Nov. 25, to carry out, under heavy fire, and at the imminent risk of their lives, the body of Lieut. Bruce H. A. Burrows, of Toronto, when the latter was killed by a high explosive shell, on the East Miraumont Road, about 50 yards

north of the Regina Trench, as he was going in at the head of a detachment of his men, to put up barbed wire, at what the commanding officer reported as a very important strategical point.

Lt. Col. J. W. Stewart, of Foley Bros. Welch & Stewart, railway contractors, Vancouver, B.C., who went overseas in command of the 239th Battalion, Canadian Overseas Railway Construction Corp dian Overseas Railways Construction Corps, is reported in a London cable as being "in charge practically of all the railway construction forces in the war zone." Another cable says he has made a great success of railway construction in France, where he has now been given the widest responsibilities. One job which the authorities wanted done in a hurry would require six weeks, according to an official setimate, but Stewart said if they would give him 2,000 Canadians he would do it in a week. He actually completed it in four days. An Ottawa dispatch of Mar. 27 says he has been promoted to Brigadier General.

Major Geo. P. MacLaren, of the 256th Railway Construction Battalion, was presented on Mar. 20 by his former associates on the Canadian Northern Ry. with an address and a pair of prism binoculars prior to leaving for overseas. The address was read by H. K. Wicksteed, M.Can.Soc. C.E., Chief Engineer of Surveys, C.N.R., and many of the old guard who worked on the railway in its construction days were represented. Major MacLaren was with the C.N.R. for many years, having started on the surveys of the Halifax & South Western Ry., one of the now tributaries, in 1903 and having been with the company continuously since that time until his enrolment for overseas service. Latterly he was District Engineer in charge of construction between Pembroke and Capreol, Ont., 220 miles.

Lt. Col. W. A. McConnell, who has raised, and is commanding, the 256th Overseas Railway Construction Battalion, C.E.F., was born in Monck Tp., Ont., in 1878. At the age of 15 he started work on the construction of highways and bridges with his father, who was a road and bridge builder. Later for a number of years he worked on railway construction as foreman of grading and track laying on the Canadian Pacific, Canadian Northern and Grand Trunk Pacific Railways. Previous to 1907 he spent some time at Toronto University, studying constructional engineering, but did not wait to graduate. Since 1907 he has been engaged in building construction-houses, stores, and factories in Toronto. He joined the Governor General's Body Guard in 1894 and while at Toronto University was a member of the engineering corps. When war started he joined the 109th Regiment as a private. In Jan. 1916 he was appointed a provisional lieutenant. In April, 1916, he attended an officers training class and qualified. On July 10, 1916, he was appointed captain in No. 2 Construction Battalion and later second in command of that battalion. On January 17, he was appointed lieutenant colonel to organize and command the 256th Railway Construction Battalion.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Algoma Eastern Ry.—A. L. SMITH, heretofore Superintendent, London Division, Ontario District, C.P.R., has been apopinted President, A.E.R., vice W. C. Franz, and has also been appointed General Manager, vice D. F. Thomas. Office, Sudbury, Ont.

T. F. RAHILLY, heretofore Comptroller, has been appointed Superintendent, vice A. J. Donegan, resigned. Office, Sudbury, Ont.

M. J. CONNOR, heretofore Travelling Auditor, has been appointed Comptroller, vice T. F. Rahilly, transferred. Office, Sudbury, Ont.

Canadian Government Railways.—J. D. McNUTT, heretofore chief dispatcher, Truro, N.S., has been appointed Inspector of Train Dispatching, and will perform such other duties as may be assigned to him. Office, Moncton, N.B.

J. E. LeBLANC, heretofore Travelling Passenger Agent, Montreal, has been appointed District Passenger Agent, Montreal, vice J. A. Everell, who will devote his entire time to the Quebec & Saguenay Ry. for the coming summer.

J. H. COTE, heretofore ticket agent, Riviere du Loup, Que., has been appointed Travelling Passenger Agent, Montreal, vice J. E. LeBlanc, promoted.

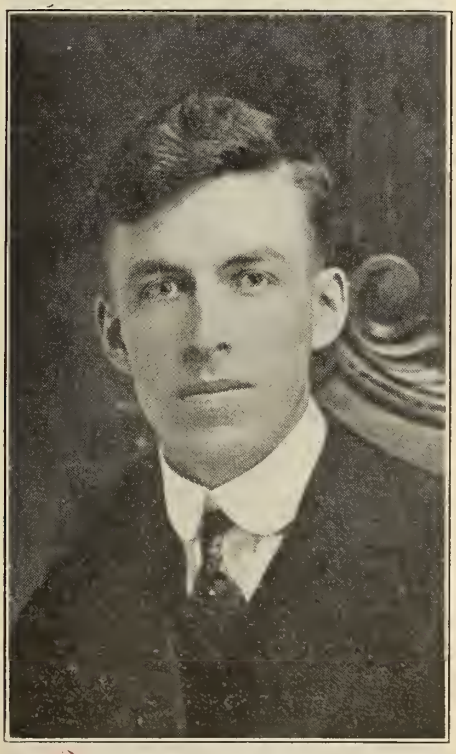
T. SAMSON, heretofore ticket agent, Carrier station, Que., has been appointed Travelling Passenger Agent, Montreal, vice T. Coulombe, resigned.

Canadian Northern Railway.—W. A. CUNNINGHAM, formerly General Agent, Passenger Department, Canadian Northern Steamships, Ltd., Montreal, has been appointed City Ticket Agent, C.N.R., Montreal.

F. McDOWELL, heretofore General Foreman, Winnipeg Stores, has been appointed Storekeeper, with jurisdiction over all matters regarding Winnipeg stores, and responsible for the stock. He has charge of the staff and reports to the General Storekeeper. Office, Winnipeg.

M. B. HELSTON, heretofore Superintendent, Duluth, Winnipeg & Pacific Ry., Virginia, Minn., has been appointed Superintendent, District 4, Western Division, vice M. B. Murphy, resigned on his appointment as Manager, Winnipeg Joint Terminals. Office, Calgary, Alta. Owing to typographical errors, this appointment was incorrectly announced in our last issue.

H. B. WOLLEN, Chief Inspector, Sleeping, Dining and Parlor Car, Hotel and News Department, Western Lines,



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T. F. Rahilly
Superintendent, Algoma Eastern Railway

has been placed in charge of the department's office recently opened at Calgary, Alta.

Canadian Pacific Ry.—The position of Assistant to the President, heretofore occupied by J. S. DENNIS, has been abolished. He will hereafter be known as Chief Commissioner of Colonization and Development. Office, Montreal.

W. H. CURLE, heretofore Administrator under the Manitoba Workmen's Compensation Act, Winnipeg, has been appointed General Solicitor, C.P.R. Office, Montreal.

E. P. FLINTOFT, heretofore Solicitor, has been appointed Assistant General Solicitor, Montreal.

G. JACKSON has been appointed General Yardmaster, West Toronto, Ont., vice J. Miles.

J. L. JAMIESON, heretofore Road Foreman of Locomotives, Medicine Hat, Alta., has been appointed Road Foreman of Locomotives, Ignace, Ont.

A. E. TASKER, heretofore Car Foreman, Field, B.C., has been appointed Car Foreman, Winnipeg.

J. R. C. MACREDIE, heretofore Resident Engineer, Connaught Tunnel, has been appointed Resident Engineer, Moose Jaw, Sask., vice T. C. McNabb, whose appointment as Superintendent, Revelstoke Division, British Columbia District, was announced in our last issue.

W. E. CLINE, heretofore Trainmaster, Lethbridge, Alta., has been appointed Trainmaster, Medicine Hat, Alta., vice H. M. Smith, transferred to Lethbridge, Alta.

S. G. DENMAN, heretofore Assistant Purchasing Agent, Vancouver, B.C., has been appointed Assistant Purchasing Agent, Calgary, Alta., vice J. T. H. Ferguson, transferred to Vancouver.

J. D. FRAINE, heretofore Trainmaster, Nelson, B.C., has been appointed Trainmaster, Calgary, Alta., vice D. J. England, transferred.

G. MOTH has been appointed Division Master Mechanic, Edmonton, Alta., vice A. E. Dales, transferred.

D. M. SMITH, heretofore Road Foreman of Locomotives, Kenora, Ont., has been appointed Road Foreman of Locomotives, Medicine Hat, Alta., vice J. L. Jamieson, transferred.

H. M. SMITH, heretofore Trainmaster, Medicine Hat, Alta., has been appointed Trainmaster, Lethbridge, Alta., vice W. E. Cline, transferred to Medicine Hat, Alta.

C. W. McCLEAR, heretofore coach carpenter, Vancouver, B.C., has been appointed Car Foreman, Crowsnest, B.C., vice A. E. Chesterman, transferred.

A. E. CHESTERMAN, heretofore Car Foreman, Crowsnest, B.C., has been appointed Car Foreman, Field, B.C., vice A. E. Tasker, transferred.

C. E. LEGG, heretofore General Agent,

Fort William, Ont., has been appointed Trainmaster, Nelson, B.C., vice J. D. Fraine, transferred.

J. T. H. FERGUSON, heretofore Assistant Purchasing Agent, Calgary, Alta., has been appointed Assistant Purchasing Agent, Vancouver, B.C., vice S. G. Denman, transferred to Calgary, Alta.

Grand Trunk Ry.—F. NEALON has been appointed acting dock agent, Vancouver, B.C., vice H. Brown, who has received a commission in the Royal Engineers' Inland Water Service.

W. WALKER, heretofore Assistant Land Commissioner, Montreal, has been appointed acting Division Engineer, Eastern Lines, vice F. L. C. Bond, who has enlisted for overseas military service. Office, Montreal.

H. PALMER has been appointed Assistant Land Commissioner, vice W. Walker, transferred. Office, Montreal.

E. C. POTTER has been appointed Chief Dispatcher, Richmond, Que., vice T. H. Mason, who has been employed as a dispatcher there.

D. J. McCUAIG has been appointed acting Master Mechanic, Ontario Lines, vice W. G. Sealey, assigned to other duties. Office, Toronto.

New York Central Rd.—F. H. HARDIN has been appointed Master Mechanic, Adirondack Division, Utica, N.Y., vice C. F. Deaner, assigned to other duties.

War Loan Subscriptions.

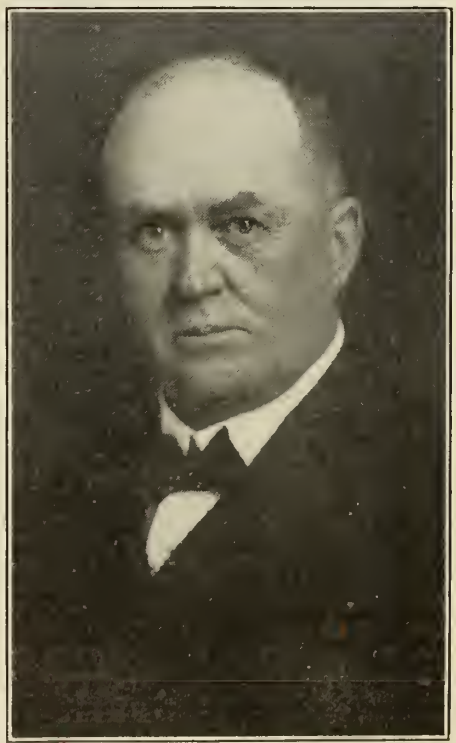
Among the largest subscribers to the Canadian War Loan bonds, offered for public subscription in March, were the following companies and persons connected with transportation and allied interests:—Steel Co. of Canada, $2,000,000; Canadian Pacific Ry. Co., $1,500,000; Imperial Oil Co., $1,000,000; Bell Telephone Co., $700,000; Canadian General Electric Co., $500,000; J. K. L. Ross, director, C.P.R., $500,000; Jas. Caruthers, President, Canada Steamship Lines, $200,000; Elder, Dempster & Co., $200,000; Sir Herbert Holt, director, C.P.R., $200,000; M. J. Haney, director, Canada Steamship Lines, $200,000; R. W. Leonard, ex chairman, National Transcontinental Ry. Commission, $100,000; J. P. Steedman, director, Canada Steamship Lines, $100,000; Victoria Rolling Stock & Realty Co., $100,000; E. R. Wood, director, Canadian Northern Ry., $100,000; Lord Shaughnessy, $80,000; Canadian Iron Foundries, $50,000; W. D. Matthews, director, C.P.R., $50,000; Montreal Warehousing Co., $50,000; Sir Edmund Osler, director, C.P.R., $50,000; W. G. Ross, President, Montreal Harbor Commission, $50,000; Senator J. M. Wilson, director, Montreal Tramways Co., $50,000; Senator Curry, President, Canada Car & Foundry Co., $25,000; H. Paton, President, Shedden Forwarding Co., $25,000; Yarrows Limited, shipbuilders, Victoria, B.C., $25,000; Mackay Companies, $1,250,000; Montreal Light, Heat & Power Co., $250,000; John Bertram & Sons Co., Dundas, Ont., $800,000; Canadian Steel Foundries, Ltd., Montreal, $250,000; Southern Canada Power Co., Montreal, $50,000; Shedden Forwarding Co., Montreal, $25,000; J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd., Montreal, $100,000; J. W. Pyke, J. W. Pyke & Co., Montreal, $25,000; C. F. Sise, Bell Telephone Co., Montreal, $20,000.

For an alleged violation of the hours of service act in the State of Vermont, the G.T.R. is being proceeded against in the District Court at Rutland.

The Enquiry into the Canadian Railways' Situation.

The Toronto Globe's Ottawa staff correspondent sent the following on Mar. 26: "That, in connection with the Canadian Northern and Grand Trunk Ry. systems,

M. B. Murphy
Manager, Winnipeg Joint Terminals



M. B. Helston
Superintendent, District 4, Western Division, Canadian Northern Railway

the country is faced with two alternatives: either to continue for seevral years more the system of subsidies and loans in vogue for the past few years, or to nationalize the roads—is said to be the outstanding conclusion to be drawn from a majority report of the commission appointed to make a survey of the whole railway situation of the Dominion. The report, it is understood, favors nationalization. A minority report, on the other hand, favors the retention of the roads uned corporation control.

"In connection with the Grand Trunk, the majority report finds that while more than $36,000,000 has been declared in dividends to the shareholders, little provision has been made for depreciation sinking fund. The members of the commission venture the opinion that a board of directors 3,000 miles away cannot be expected to effectively manage a Canadian railway. It is stated that the life of a car is only 20 years, and that as a result of the lack of provision for depreciation the G.T.R. is running only one car for every seven run by the C.P.R. The majority report is of the opinion that an expenditure of $51,000,000 would be required to put the road on an economic earning basis. This would include the Grand Trunk Pacific. The amount estimated as necessary to put the Canadian Northern on a running basis is $50,000,000."

Another Ottawa press dispatch credits Sir Henry Drayton, one of the commissioners, with stating Mar. 27 that the report was not finished and that nothing about it had been given out. The same dispatch says it is reported there that the chairman of the commission, A. H. Smith, President, New York Central Rd., favors the continuance of private ownership, with such financial adjustments as may be necessary to meet the exigencies of the situation, and that the two other commissioners, Sir Henry Drayton and W. M. Acworth, are in favor of nationalization.

Liquor Selling on U. S. Trains.—New York press despatch, Mar. 24.—W. H. Anderson, State Superintendent of the Anti Saloon League, states that he has sworn out, in Schenectady County, a complaint as the basis for a warrant for the arrest of A. H. Smith, President of the New York Central Rd., the particular alleged offence being the sale of two bottles of intoxicants, which, it is said, were carried off in the original packages. The object of the league is to stop the violation of the law, and the selling of liquor on trains, and to secure the settlement of the legal questions involved.

Canadian Government Railways' Employes' Provident Fund. Bliss A. Bourgeois, Assistant Comptroller and Treasurer, and W. P. Hutchinson, dispatcher, Moncton, N.B., have been elected members of the Provident Fund Board for the year ending Mar. 31, 1918. The other members are F. P. Gutelius, General Manager, Chairman; S. L. Shannon, Comptroller and Treasurer; H. H. Melanson, General Passenger Agent; C. B. Trites, Secretary.

Guelph Railway Matters.—The Ontario Legislature has struck out of the bill promoted by the City of Guelph, Ont., the sections providing for a change in the method of electing the city council, dissolving the boards of directors of the Guelph Junction Ry. and of the Guelph Radial Ry., and declaring that the new council shall have all the powers of the dissolved boards.

American Institute of Electrical Engineers.—H. W. Fisher, Chief Electrical Engineer, Standard Underground Cable Co., Perth Amboy, N.J., addressed the Toronto section, Mar. 16, on the manufacture of underground cables and their use under modern practice.

Electric Railway Department

The City of Toronto and its Electric Railways.

Three electric railway companies operate within the limits of the City of Toronto, in addition to the Toronto Civic Ry., which is, at present, in about four sections, with no physical connection with each other, or with any of the companies' lines. For several years past there has been considerable friction between the city and the various companies as to interpretation of agreements, franchises, etc. The Toronto civic lines were built in several districts, which had, at various times, been incorporated in the city, but only after strenuous efforts had been made to compel the Toronto Ry. Co. to build such lines, which the city held it was compelled to do under the terms of its franchise. After some litigation, the courts held that the company was not so compelled, and the civic lines resulted. The three companies operating in the city are the Toronto Ry., its subsidiary, the Toronto & York Radial Ry., and the Toronto Suburban Ry., the lines of the two latter being in portions annexed to the city subsequent to the granting of the franchise to the Toronto Ry. Co. The Toronto & York Radial Ry. is in three sections, north, east and west of the city, and these sections have no physical connection. The section to the north was originally the Metropolitan St. Ry., operating on Yonge St., passengers making connection with the Toronto Ry. near the C.P.R. North Toronto station. About two years ago, a portion of the franchise granted to the Metropolitan Ry., by York Tp., expired, and the City of Toronto, having in the meantime extended its limits, declined to renew that portion of the franchise on any terms and removed the track. There was for a considerable time after no track connecting the Toronto Ry. with the Toronto & York Radial Ry., which then had its southern terminus at Farnham Ave. The city declined the Toronto Ry.'s offer to lay the track and operate it under its franchise, which expires in 1921. maintaining that the company had no rights on that portion of the street. Litigation followed, with the result that the company laid the track and operates its cars over it. Another section runs from Sunnyside, on the southern water front, west to Port Credit, the first portion being originally the Toronto & Mimico Ry. This franchise within the city expired some few years ago, and the city nominally acquired the property and rights under arbitration proceedings, but has made no payment for the property. That portion is now being operated by the T. &. Y.R.R. by arrangement with the city. The third section, on the eastern side of the city, runs along Kingston Road from Queen St., and on east to West Hill, 11½ miles. The first portion of the line was originally the Toronto & Scarboro Electric Ry., and on the expiry of the franchise for that section, the city acquired the portion within the extended city limits to Main St., East Toronto. This is still being operated by the company under arrangement with the city.

The Toronto Suburban Ry. operates west of the city, and along certain streets in West Toronto, now part of Toronto. Under the terms of its franchise the company has exclusive rights on certain streets in West Toronto, some of which have never been exercised, and the company has recently practically completed its line to Guelph. There have been a number of disputes regarding the interpretation of agreements, as to the laying of pavement, etc., which have generally resulted in the company's favor.

The Toronto Ry. operates on the streets within the city, and its franchise expires in March, 1921. It appears to be the city's intention to take over the lines, etc., on the expiry of the franchise according to the original agreement, but for several years there has been considerable jockeying by both sides as to the improvements and additions which the city demands, and which, with an expiring franchise, the company is not anxious to grant. The City of Toronto is promoting a bill in the Ontario Legislature in an attempt to clear up several of these disputes, and which is, at the time of writing, being dealt with in committee.

Toronto & York Radial Ry.

Sec. 5 of the bill provides for the expropriation of the Metropolitan Division, within the city limits, and all the real and personal property used in connection with it and necessary for the operation, and including all franchises, rights and privileges which the company may have respecting the construction and operation of railway lines within the city limits, upon paying such compensation therefor as may be agreed upon between the company and the city, and in the event of disagreement, the compensation to be fixed by the Ontario Railway and Municipal Board. It also provides for the construction of a double track on Yonge St., North Toronto, from the southern terminus of the T. & Y.R.R. to the northern city limits, and for the granting of running rights over same to the T. & Y.R.R., on terms to be mutually agreed upon. A subcommittee of the legislature was appointed to go into the whole question of expropriation, and after some discussion and the hearing of a variety of opinions, the section was reported with amendments that the city must take proceedings to expropriate within three months after the passing of the bill, and that each party has the right of one appeal to the Appellate Division of the Supreme Court of Ontario, to be made within ten days of the arbitration award. In the event of an agreement, the city is to grant running rights on terms to be mutually agreed upon, or to be decided by the Ontario Railway and Municipal Board, and should the city not accepot the board's award, it is to pay the company's costs and any damages resulting from the proceedings. Any bylaw must be passed by the city within three months of the passing of the act, and the city will have three months from the making of the award, or from the date of any judgment of the Appellate Court on any appeal, in which to accept it. The subsection relating to the laying of double tracks on Yonge St. was also amended by providing that the track is to be of standard gauge.

Toronto Suburban Ry.

Sec. 4 of the city's bill provides that notwithstanding any agreement, statute, order or decision of any court, board or committee to the contrary, the company shall from time to time construct and maintain a pavement upon that portion of Davenport Road within the city limits, occupied by the railway, of a character and quality similar to that constructed and maintained from time to time by the city on the remaining portion of the highway. This matter has been fought through the local and Dominion courts, and before the Judicial Committee of the Privy Council, resulting in final decision in favor of the company, and the object of the present proposed legislation is evidently to obtain and validate a different interpretation of the original agreement between the company and York Tp., than has been given by the courts. The private bills committee has held the question over for the present and suggested that the company and the city should get together on a joint scheme, and has suggested that the city should lay the pavement and the company pay the cost of maintenance, and the portion of the cost they would have to pay for a pavement laid under the old agreement.

A separate bill respecting the Toronto Suburban Ry. was also dealt with by the committee, providing that notwithstanding anything contained in the company's act of incorporation and amending acts, the extensions and branches authorized shall be commenced within two years of the passing of this act and shall be completed and put into operation within five years of the passing of this act, or be void respecting so much of the said extensions and branches as may then remain uncompleted. This clause refers to the construction of certain lines to the south of Dundas St., which the company was originally authorized to build. Under the agreement with the city, the company can be ordered to build the lines within six months of the date of notice, and, failing to comply, the charter reverts to the municipality. It is probable that all the lines which the company is authorized to build within the city limits may be included in the bill before it gets through the legislature.

Toronto Railway.

Sec. 8 provides that the Toronto Ry. shall build and place in operation 100 new cars during 1917, and 100 additional cars during 1918, and in default shall pay to the city $100 a day for each and every car less than these numbers. The committee struck this section out of the bill, on the ground that it was a matter for the Ontario Railway and Municipal Board to deal with. This is a second attempt to obtain by legislation what the city has failed to obtain by any other means. The chief object sought in this regard seems to be the elimination of overcrowding, but apart from the question as to whether overcrowding can be cured by adding cars alone to a system, it is an admitted impossibility to obtain deliveries of cars or of materials for their manufacture within the time stated, under existing conditions. The passing of such a measure at such a time would reduce legislation to an absurdity.

Since the foregoing paragraph was put into type, the matter was reopened in committee Mar. 27, when the question of validating an order of the Ontario Railway and Municipal Board respecting ad-

ditional cars, which is given on another page, came up. There is a clause in the agreement between the city and the company, to the effect that cars utilized on the street railway must be built in Toronto, and all the company's cars have been so built. Under existing circumstances, the city is prepared to waive that, and claims that there is no difficulty in obtaining cars or material for their construction. It was therefore proposed that the city be compelled to purchase 100 cars in 1917, and a further 100 in 1918, and sell them to the company at a reasonable price. This was carried by 22 votes to 8, and the Board's order was validated by 19 votes to 9. The Chairman of the committee, Hon. I. B. Lucas, Attorney General, in referring to the first named proposal, is reported to have said, "I won't report such a foolish clause as responsible chairman of this committee. The city absolutely declines to be bound by this." As there appeared to be no sign of agreement, the committee adjourned on the understanding that a new clause would be drafted, which it was said would prove satisfactory.

Toronto Civic Ry.

Sec. 10 authorizes the city to pass certain bylaws for the creation of debts and for issue of Toronto consolidated loan debentures, without submitting them to a vote of the ratepayers. Among the items included are: $140,000 to cover overdrafts and to complete work on the civic lines; $17,000 for purchase of cars; $125,000 to cover amount already spent and to complete work on the Bloor St. line.

Transportation of Postmen in Regina.

The question of the rate to be paid by the Post Office Department for carrying postmen on the Regina Municipal Railway has been in dispute for some time. Under the old arrangement the rate paid was $25 a man per year, which it was found gave the railway only a little over 1c a ride. The management refused to continue the arrangement and asked an increase to $50. The Post Office Department then offered $35, and this was accepted by a majority vote at a city council meeting recently, though it was strongly opposed by Commissioner Thornton, under whom the railway is operated, and who showed that it costs slightly over 6c a ride for each person using the cars. The Mayor and three other councillors also opposed it, but were outvoted, the supporters of the $35 rate advancing the hackneyed argument that the cars had to be run any way and that the city might as well have the revenue, overlooking the fact that the Post Office Act empowers the Postmaster General to make an allowance of $50 a year to postmen in lieu of electric railway transportation. The new contract is for one year only and the postmen are to ride on the cars, without paying fares, only when on duty and not after 6 p.m.

Sunday Service Asked.—The Galt, Preston & Hespeler St. Ry. has been asked by a committee, representing farmers and other residents in the Freeport and Centreville districts, between Preston and Kitchener, Ont., to take steps to secure power to operate a Sunday service, the residents referred to desiring better facilities to attend church services in Preston or Kitchener.

The Port Arthur Civic Ry. has bought 2 miles of trolley wire recently.

Electric Route Maps on British Columbia Electric Railway.

The British Columbia Electric Ry. has placed two large electrically lighted route maps outside the entrance of its interurban station at Carroll and Hastings Sts., Vancouver, with the object of showing the layout of the company's city and interurban line, and as a part of its policy of publicity in the interests of the public as well as of the company. These maps are painted on plate glass, each in three sections, separated by copper beading. The map on the west side shows the city lines, and the one on the east, the interurban lines. In each case the lines are shown in red, names in white, parks in green, water in light blue, all transparent, and land in opaque black. The company's stations are shown by red dots, and the head office by a large red dot. The frames containing the maps measure 10 ft. 1 in. long by 5 ft. 1 in high, and are 6 ins. deep, made of angle steel frame 1½ by 1½ by 14 in., with back and sides of 22 gauge galvanized iron rivetted and soldered to angle frame with 3 in. copper strip round outer edge of glass. The frames are wired in three divisions, each carrying four 40 watt lamps, and the divisions are so arranged that the lamps can readily be removed for replacement.

Similar maps are utilized on the underground electric railways in London, Eng., but it is believed that these are the first to be used on this continent.

Entrance to British Columbia Electric Railway's Interurban Station, Vancouver.

The Tractive Resistance on Curves of a 28 ton electric car has been made the subject of a study by the Railway Department of the Engineering Experiment Station of the University of Illinois. The results which are set forth in bulletin 92 establish, for this car, the relation between curve resistance and speed, and between curve resistance and rate of curvature; the ratio in both cases is direct. Tests were conducted upon each of seven curves on the Illinois Traction system, the curvature of which varied from 2 to 14½ degrees. Test runs were also made over tangent track adjacent to the curves. Copies of the bulletin may be obtained gratis by writing the Director of the Engineering Experiment Station, Urbana, Illinois.

Answers to Questions on Electric Railway Topics.

Following are questions sent to the American Electric Railway Association's question box, with answers by A. Gaboury, Superintendent, Montreal Tramways Co.:

Are waiting rooms justified in city traffic, where the headway is less than 15 minutes?

Do not consider them necessary, unless as adjuncts to ticket offices necessary for the company's interests.

On interurbans running through sparsely settled territory, is the lighting of waiting room or shelters necessary?

Think waiting rooms should be lighted from trolley wire, in the interests of public propriety.

In the training in a limited time of technical graduates for executive positions, say as department heads, is it better to give them a brief tour of duty in all departments or keep them continuously in one department, and thereby give them a thorough training in that particular branch?

An experience in all departments tends to broaden a man's views, with a subsequent benefit to himself and his company.

What is the most practical and economical way to safeguard operation over bridges with draw spans?

Our drawbridges over canals are protected by derails at each side and cars must be brought to a dead stop before reaching derail switch.

Do you provide open or closed automobiles for the use of your executive officers?

Open autos.

Interurban Motors Limited has been organized by St. Thomas, Ont., business men, with a capital stock of $100,000, the Managing Director being W. N. Warburton, General Manager, Secretary-Treasurer and Purchasing Agent, London and Lake Erie Ry. and Transportation Co., London, Ont., to carry freight and passengers, in connection with the electric railway mentioned, over short distances tributary to its line. Large passenger cars have been purchased and it is expected to begin operation in May.

The St. John Railway's Sale.

The New Brunswick Investment Co., which bought out the St. John Ry. Co.'s property recently, was incorporated Feb. 2, 1917, for the purpose of carrying out the transfer, its members all being in the employ of Wm. Thomson & Co., steamship owners and fire and marine insurance brokers, St. John, N.B. The terms of the sale were fully detailed in a circular issued to the railway company's shareholders, and published in Canadian Railway and Marine World for March, pg. 113.

The property has since been transferred to the New Brunswick Power Co., which controls water powers at Magaguadavic and Lepreaux. Its capitalization is as follows: First preference stock authorized, $3,500,000, issued $1,000,000; second preference stock authorized $1,500,000, issued $350,000; common stock authorized and issued $2,000,000; first mortgage 5% bonds authorized, $5,000,000; issued $1,750,000.

L. R. Ross, Terminal Agent, Intercolonial Ry., St. John, is President; G. M. O. Peters, Treasurer, and H. M. Hopper, General Manager and Secretary. Messrs. Peters and Hopper held similar positions in the St. John Ry. Co. The Boston Safe Deposit and Trust Co., Boston, Mass., and the Royal Trust Co., St. John, N.B., are trustees for the bonds, the Boston Safe Deposit and Trust Co. being also registrar of the bonds.

Overcrowding on the Toronto Railway.

Canadian Railway and Marine World for March contained some information regarding the city's proceedings relative to the overcrowding of passengers on the Toronto Ry. cars. At that time a case was pending in the local police court, charging the company with maintaining a public nuisance. The proceedings were taken at the instance of the Medical Health Officer, under the local health act, and on behalf of the company it was maintained that the City Health Department had no jurisdiction in the matter, and that, in any case, a nuisance, as described under the health act, did not apply to a street car carrying passengers beyond its capacity. The magistrate eventually adopted this view, and the case was dismissed. A similar case, under a prior conviction by another magistrate, is now the subject of an appeal to the Judicial Committee of the Privy Council, and judgment has been reserved pending a reference to the Provincial Attorney General as to the jurisdiction in such matters. The company maintains that in regard to its operation as a public utility, it is under the Ontario Railway and Municipal Board's jurisdiction.

In 1914, the Ontario Railway and Municipal Board ordered the company, upon application of the city, to place additional cars in service, but these orders the company expresses itself as, owing to a variety of circumstances, unable to comply with. A further application made by the city recently has resulted in the board issuing orders, first, that the company shall place in operation on its system the remainder of 50 motor cars ordered by the board Nov. 6, 1914, 28 only having been so placed in operation by May 1, and further it orders as follows:

Upon the application of the City of Toronto for a reopening and a reconsideration of the board's order, Nov. 6, 1914, in respect of the number of additional cars to be furnished by the Toronto Ry. Co. to accommodate reasonably the passengers offered for transportation, and upon hearing the evidence adduced and counsel for the city and the company, it appearing that the equipment, appliances and service of the company in respect to the transportation of passengers are inadequate in that the company does not operate a sufficient number of cars; the board orders that the company place in operation 100 additional double truck motor cars by Jan. 1, 1918, and a further 100 additional double truck motor cars by Jan. 1, 1919; and to ensure the faithful and punctual performance of this order, the company shall from time to time on the request of the city inform the city of the things done by the company in and about the performance of this order, and that R. C. Harris, City Engineer, or his authorized representatives, shall from time to time have access to the company's premises, works and records in order that the city may verify the information so given, and may be fully advised as to the progress and efforts made in carrying out this order.

At the same time as this application was before the board, the city was applying to the Ontario Legislature on similar lines, but the section in the city's omnibus bill was struck out by the committee.

Owing to the recent fire at the company's car barn at King St. East, there is a considerable shortage of available cars for heavy traffic, and it is reported that the mayor stated recently that it was his intention to press for an addition of 500 cars immediately.

Jitney Traffic Notes.

A jitney bus service is being operated between the Post Office at Ottawa, Ont., and Hull, Que.

The Winnipeg Jitney Owners' and Drivers' Association started operating over some new routes Mar. 12.

Complaints have been made recently that jitney drivers in Hamilton, Ont., are charging higher fares, particularly in the late hours of the night.

After considering the appeal of the jitney men to amend the bylaw regulating the traffic passed recently, Vancouver City Council decided not to re-open the matter.

Several jitneys are being operated on Yonge St., North Toronto, to the point where the Toronto Ry. and the Toronto and York Radial Ry., Metropolitan Division, services end.

The California Railroad Commission has under a Supreme Court decision, taken complete jurisdiction over all jitney lines in the state operating outside incorporated municipalities. All jitney lines had to file schedules of service and rates by Mar. 1. The commission has asked the legislature to define clearly its power over jitneys.

Winnipeg jitneymen appeared before the city council's license committee, Mar. 15, and asked for amendments in the bylaw regulating jitney traffic. They desire to have stricter control exercised among other things in the direction of preventing "casuals" entering the field at busy seasons and then dropping out when the rush is over, etc.

The City of Edmonton is asking the Alberta Legislature to authorize it to make special bylaws as to motor vehicles carrying passengers, particularly in the direction of limiting the number of passengers and the weight of freight to be carried, defining how passengers and freight shall be carried on the vehicles; defining the routes upon which they may run; limiting the hours within which they may operate and providing for the giving of bonds by owners or lessees.

Mainly About Electric Railway People.

J. B. Hardy has been appointed Chairman of the Public Utilities Committee of the Fort William, Ont., City Council, which operates the Fort William Electric Ry., succeeding A. E. Wodeman, resigned.

Charles A. Drummond has been appointed Assistant Publicity Agent, Detroit United Ry., and assistant editor of Electric Railway Service, the company publication, succeeding A. H. Sarvis, resigned.

The Hon. James Leitch, K.C., a judge of the Supreme Court of Ontario, and formerly Chairman, Ontario Railway and Municipal Board, who died recently, left an estate of $19,903, to be divided amongst his widow, son and four daughters.

Martin N. Todd, President, Galt, Preston & Hespeler St. Ry., and General Manager, Lake Erie & Northern Ry., returned to Galt, Ont., early in March, much improved in health, after spending some weeks in New Orleans and other southern points.

Leonard Tait, whose appointment as Secretary Treasurer, London St. Ry., London, Ont., was announced in our last issue, was born at Hamilton, Ont., Aug. 9, 1882, an entered transportation service, Nov. 1, 1899, since when he has been, to May 9, 1900, clerk, Freight Department, Michigan Central Rd., London, Ont.; May 10, 1900, to July 21, 1901, clerk, Freight Department, G.T.R., London, Ont.; July 22, 1901, to Nov. 14, 1904, clerk and telegraph operator, Freight Department, M.C.R., London, Ont.; Feb. 16, 1905, to Sept. 16, 1912, chief clerk and cashier, Freight Department, same road, London, Ont.; Sept. 17, to Nov. 15, 1912, Travelling Freight Agent, New York Central Lines, Toronto; Nov. 16, 1912, to Feb. 14, 1917, Secretary Treasurer, London & Lake Erie Ry. & Transportation Co., London, Ont.

F. X. Couture, whose appointment as Superintendent, Railway Department, Sherbrooke Ry. and Power Co., Sherbrooke, Que., was announced in our last issue, was born at Quebec, Que., in 1875, and from an early age to 1895, was engaged on a farm, receiving only six mont gaged on a farm, receiving only six months of school instruction. He entered the Sherbrooke St. Ry. Co.'s service in 1897 as a laborer, during the construction of the line, and later served as motorman and conductor. From 1900 to 1904, he was in Quebec Central Ry. service, as carpenter, and in the locomotive department, returning to the Sherbrooke Ry. service in 1904, as General Foreman of rolling stock and electric lines, and in 1910 when the property was taken over by the Sherbrooke Ry. and Power Co., was retained as General Foreman of Rolling Stock, and promoted to Superintendent of Transportation in 1912.

The City of Vancouver received $2,029.25 as percentage on the earnings in the city, for February, an increase of $375.05 over that for Feb. 1916. During February, 2,441,792 passengers were carried on the city and suburban lines, compared with 2,334,233 for Feb. 1916.

Electric Railway Notes.

The Moncton Tramways, Electricity & Gas Co. has applied to the New Brunswick Public Utilities Commission for approval of its traffic rates.

The Port Arthur, Ont., Public Utilities Commission is reported to be considering the possibility of employing women conductors on the civic railway.

The Quebec Ry., Light & Power Co. has closed a contract for the supply of electric power to the legislative and other provincial buildings in Quebec City.

The female members of the British Columbia Electric Ry.'s office staff at Vancouver, held a dance Mar. 16, to raise funds for the Returned Soldiers' Club.

Plans for this second track work, so far as they affect the city of Toronto, have been filed at the city hall. The council is being asked for leave for grade crossings at McLennan and Summerhill Avenues.

The special commission appointed by the Quebec Legislation to prepare a new franchise for the Montreal Tramway's Co. is holding regular public meetings, at which te views of any person interested are heard.

The International Transit Co., Sault Ste. Marie, Ont., is in the market for a good second hand double truck, double end, controlled car, with a seating capacity for 44, and preferably arranged for p.a.y.e. operation.

It was stated in Winnipeg, Mar. 1, that there were no men eligible for military service employed on the Winnipeg Electric Ry., and that it might be necessary to employ women as conductors in order to maintain the staff.

The Montreal Tramways Co. has ordered 50 car bodies and trucks in the U. S., and the necessary equipment from the Canadian Westinghouse Co. An additional 50 similar cars were to be ordered by the end of March.

The British Columbia Electric Ry. has offered the city the free use of its park property, of five acres, on Twenty-first St., North Vancouver, in connection with the wartime thrift vegetable growing campaign now being promoted.

The Montreal Stock Exchange has listed the Ottawa Car Manufacturing Co.'s stock, consisting of 11,779 shares of $100 each, and the Ottawa Traction Co.'s stock, consisting of 56,307 shares of $100 each, for trading on the exchange.

The actual cost of the Lethbridge, Alta., Municipal Ry., to the city, during 1916, was $27,924.89. The council has put $30,905.46 in the estimates for this year, as the amount which the city will have to contribute to meet interest charges, etc.

The Brantford, Ont., City Council has passed a resolution recommending the employes on the city's electric railway to complete their term with the railway at the present rate of wages and recommending the commission to establish a minimum of 25c an hour at the expiration of the present agreement.

The Vancouver City Council railways and bridges committee has recommended the council to investigate all the street car lines operated by the B.C.E.R. and ascertain whether or not they were covered by proper operating agreements with the city.

G. Moir, formerly of Aberdeen, Scotland, in addressing the Grandview Ratepayers' Association, Mar. 11, advocated the taking over by the City of Vancouver, of the British Columbia Electric Ry.'s entire city plant when the franchise expires in 1919.

The Alberta Legislature is being asked to amend the City of Calgary's charter, authorizing it to pass a bylaw regulating and governing the method or manner whereby passengers on the municipal railway shall pay their fares or whereby such fares may be collected by the city.

The Montreal Tramways Co. has secured a verdict of $104 against the St. Francois Salane School Board. This amount was collected as taxes upon land which the board assessed as belonging to the Montreal Park & Island Ry. The company had only a right of way over the land and could not be assessed.

Superintendent Moir of the Edmonton Radial Ry. has instituted a regular weekly meeting of the heads of departments to discuss matters that may tend to the advancement of the interests of the line. This system has already been found to work to advantage in connection with the city's telephone plant.

The London, Ont., City Council has authorized the inclusion in a bill being presented in the Ontario Legislature of provision for the erection by the London Railway Commission of a grain elevator at Port Stanley, to be operated in conjunction with the London & Port Stanley Ry. The approximate cost of the elevator is $100,000.

London, Ont., Street Ry. conductors and motormen have organized as a branch of the Amalgamated Association of Street and Electric Railway Employes of America. The men have applied to the company for an increase in wages. The present scale is from 21c to 26c an hour, and the men ask for a scale starting at 25c, and increasing to 30c.

Some months ago there was a collision between a jitney and a British Columbia Electric Ry. car at the Central Park crossing, Vancouver in which several persons were injured. They sought to recover damages from the B.C.E.R., and at the trial of the action recently the judge dismissed the action and held the driver of the jitney, in which the injured persons, were sitting, to have been responsible for the accident.

The report of P. A. Macdonald, Manitoba Public Utilities Commissioner, was submitted to the Legislature, Jan. 30. It covers the first year of his work as Commissioner, and outlines the work done during the year, reference being particularly made to the power possibilities of the province. These were investigated by the Commissioner and G. T. Guy, electrical engineer, the latter of whom makes a special report, which is included.

The International Ry., operating in Buffalo and Niagara Falls, N.Y., and Niagara Falls and Queenston, Ont., was recently compelled to suspend its services temporarily for some hours a day, owing to shortage of electrical power. The company takes power from the Niagara Falls Power Co. to operate its Niagara Falls local lines, and from the Niagara, St. Catharines & Toronto Ry., for its line between Queenston and Chippawa, Ont.

Following are officials of the Trans St. Marys Traction Co. for the current year: W. C. Franz, President; Jas. Hawson, Vice President; J. F. Taylor, Vice President, Toronto; A. Taylor, Secretary; E. W. Shell, Treasurer; P. B. Nash, Comptroller; C. H. Speer, Purchasing Agent; J. H. Stewart, Superintendent, Sault Ste. Marie, Mich. All have offices at Sault Ste. Marie, Ont., except where otherwise mentioned. The electric railway is in Sault Ste. Marie, Mich.

The City of Vancouver is proposing to redraft its charter so as to give it power to supply light and power to the citizens. At present the British Columbia Electric Ry. is supplying light and power in the city, and there appears to be some clauses in the existing charter which forbids the city competing with the company. The City Solicitor said the company had no rights against the city except in regard to its tram system, but he pointed out that the company had other and vested rights which would have to be respected. The company might have these rights irrespective of any agreement with the city. A special committee was appointed by the Council Mar. 13, to redraft the parts of the charter affecting this matter.

The Port Arthur Public Utilities Commission has granted increases of wages to the following employes of the civic railway for the current year: Master mechanic, from $125 to $130 a month; armature winder, $90 to $100 a month; machinist, blacksmith and carpenter, 35c to 37½c an hour; painter, 32c to 34c an hour; pitman, first class, 30c to 33c an hour; pitman, second class, 25c to 30c an hour; laborers and car washers, 25c to 27½c an hour; night foreman, from 30c an hour to $100 a month; track foreman, $90 to $100 a month; boundary office clerk (half paid by Fort William), $60 to $80 a month; street railway cashier, $50 to $55 a month. The motormen and conductors received an increase of pay last summer.

Nipissing Central Ry. Fire.—The car barn at North Cobalt, Ont., was partially destroyed by fire, Mar. 4. The fire started at the north end of the building, which includes the car barn, shop, sub station and offices, and destroyed the car shed and offices, the shop, sub station and boiler plant, at the south end, being saved. Five cars in the shed were completely destroyed. Additional rolling stock is to be purchased as soon as possible, and the building will also be repaired. A partial service is being maintained with the cars that were in the shop and outside the building and not injured by the fire. The railway is operated by the Timiskaming and Northern Ontario Ry. Commission, for the Ontario Government. S. B. Clement, North Bay, Ont., Chief Engineer and Superintendent of Maintenance.

Dominion Power & Transmission Co.'s Wages.—The Dominion Power & Transmission Co., Hamilton, Ont., operating the Hamilton St. Ry., Hamilton & Dundas Radial Electric Ry., Hamilton, Grimsby & Beamsville Electric Ry., and Hamilton & Brantford Ry., announced on Mar. 9 a war bonus of 2c an hour to conductors and motormen, applying on all the lines. This is in addition to the amounts provided for in the agreement between the company and the men on Mar. 21, 1916, and is for an indefinite period, the advance having been entirely voluntary on the company's part.

Winnipeg Electric Ry. conductors and motormen met Mar. 31 to discuss wages, etc. The present wage schedule expires May 1st, and under its terms it may be continued from year to year, unless either party gives 30 days notice of any change desired.

Electric Railway Projects, Construction, Betterments, Etc.

Lacombe & Blindman Valley Electric Ry.—The Alberta Premier stated in the Legislature, Mar. 9, that 35 miles of grading had been completed from Lacombe along the valley of the Blindman River to Rimbey. The government had paid out of the funds realized by the sale of the guaranteed securities $128,647.07. In default of the company paying interest on the bonds, the government paid to Nov. 6, 1916, $20,517.16. The government holds a first mortgage on the railway property and franchise. (May, 1916, pg. 189, and Apr., 1916, pg. 158.)

London & Port Stanley Ry.—The City of London is applying to the Ontario Legislature for authority to pass bylaws without obtaining the consent of the ratepayers to issue $25,000 of debentures to provide a freight motor car for the railway, and to confirm bylaw 5439 providing for the issue of $75,000 of debentures for the London Railway Commission.

A suggestion has been made that the London Railway Commission's project to build a grain elevator at Port Stanley should be abandoned, and that 100 freight cars should be bought instead. P. Pocock, Chairman of the Commission, is reported to have said, Mar. 6: "We could use more freight cars, and perhaps that will be the next thing we will go after, when we have an elevator—an elevator is the need of the moment." The city council, on Mar. 5, decided to issue $100,000 of debentures for the erection of the elevator and has applied to the Ontario Legislature to grant it the necessary authority to do so without a vote of the ratepayers. (Feb., pg. 73.)

Lake Erie and Northern Ry.—The new Union Station in Brantford, Ont., of which an illustrated description was given in Canadian Railway and Marine World, Aug. 1916, pg. 240, was opened for use Mar. 12. It is being used by the Brantford and Hamilton Ry., as well as by the L. E. and N. Ry.

Negotiations are still in progress between the company and the G. T. R. with reference to the route of the electric railway entry into Port Dover, Ont. It is desired to secure an entry over the tracks of the G.T.R., but in the event of this not being possible, the company will build its own line on St. Patrick St. (Mar. 1916, pg. 46.)

Ottawa Electric Ry.—The Ottawa Board of Control has received a letter from the company refusing to operate its cars over the Pretoria Ave. bridge and to extend its service to Ottawa East. The company stated that the location of the bridge and its type was decided upon without consultation with it, but apart from that the company says it is not prepared, owing to the short time which its franchise has to run to make extensions of its lines. The city council has appointed a committee to interview the company's officers with regard to this and a number of other matters in connection with the operation of the railway. (Dec., 1916, pg. 502.)

Peterborough Radial Ry.—The City of Peterborough is applying to the Ontario Legislature to authorize its Utilities Commission to have the control and management of the plant, property, business and assets of the Peterborough Radial Ry., in the event of the same being acquired by the city; that it shall have power to issue debentures to pay for the same without the assent of the ratepayers, and that the commission shall have all the powers in regard to the railway which the council may confer upon it by bylaw. (Feb., pg. 73.)

Toronto, Barrie & Orillia Ry.—The Ontario Legislature in 1915 passed an act extending the time within which the company could build its projected railway between Toronto and Orillia, and providing that the section of line from Barrie to Utopia, on the C.P.R., was to be the first section to be built. Section seven of the act declared that the act was only to come into force upon proclamation by the Lieutenant Governor in Council. In adding this section the Legislature overlooked the fact that the extension of time was to run from the passing of the act, and therefore that it might run out before the act came into force. The Legislature is being asked to amend the act by substituting the words, "coming into force" for "passing" in sec. 3 of chap. 83, statutes of 1915. (Feb., 1916, pg. 115.)

Toronto Ry.—Plans for the Pape Ave. line have been submitted to the Ontario Railway and Municipal Board. The company is ready to go ahead with construction as soon as the board approves the plans. Under the board's order, the company had to start construction by April 1. (Feb., pg. 73.)

Transcona Electric Ry.—The Manitoba Legislature is being asked to incorporate a company with this title to build, and to operate with any power except steam, a line in the town of Transcona and in the rural municipalities of Springfield and East Kildonan to a point or points in Winnipeg or St. Boniface; to connect with any lines in operation or to be built by the Winnipeg Electric Ry., and to build branch lines to any other points in the municipalities named or elsewhere in the province, subject always to the Winnipeg Electric Ry.'s rights. The capital of the company is fixed at $1,000,000, and the office is to be in Winnipeg. The provisional directors are: E. P. Garland, E. Frith, C. W. Chappell, R. Siderfin, L. Palk, Winnipeg. Mr. Palk is Assistant to the Manager, Winnipeg Electric Ry. (Mar., pg. 113.)

London and Lake Erie Railway and Transportation Co's Officials.

On account of his many other duties, the President, W. K. George, of Toronto, has resigned, and has been succeeded by G. B. Woods, of Toronto, heretofore Vice President, and the latter position has not been filled. The directors in addition to the President, are: W. K. George, J. B. Holden, Sydney Jones, Toronto; T. H. Purdom, K.C., Jno. Purdom, Jno. Milne, London, and J. W. Scott, Listowel.

W. N. Warburton, General Manager, has also been appointed Secretary Treasurer, and has appointed the other officials, as follows: Accountant, C. G. Newton, London; Chief Dispatcher, H. L. MacDonald, St. Thomas; Electrical and Line Superintendent, E. Rapson, St. Thomas; Mechanical Superintendent, F. Morley, St. Thomas; Roadmaster, William Evans, Lambeth.

The International Transit Co., Sault Ste. Marie, Ont., is considering changing its cars for p.a.y.e operation.

Three Rivers Traction Co's Operations.

The Shawinigan Water & Power Co.'s report for 1916 has the following reference to two of its subsidiary companies: "The directors are gratified with the healthy development of the city and district of Three Rivers. The North Shore Power Co., your subsidiary in that district, has extended its field of operation so as to include the principal manufacturing towns between Three Rivers and Quebec, and the expenditure made this year in new transmission lines will result in a largely increased revenue for this company.

"The Three Rivers Traction Co. during the year obtained a franchise from the Municipality of Cap de la Madeleine, on the east side of the St. Maurice River, and during the summer 3½ miles of new track were laid to connect that town with the city of Three Rivers. The expenditure has resulted in a satisfactory increase in revenue. The additions to the St. Maurice River Co.'s plant at the terminus of the Three Rivers Traction Co.'s line, are nearing completion. The increased capacity of the works will add materially to the labor required, and thus becomes a factor in the growth of the earnings of both of your company's subsidiaries doing business in the district."

Fares on Port Arthur and Fort William Civic Railways.

The Public Utilities Commission of Port Arthur and the Utilities Commission of Fort William, Ont., met in joint session, Mar. 1, and adopted a new schedule of fares for the civic railways, which is expected to be made effective early in April, as follows:

One fare in each city. This means that after crossing the boundary line on a car another fare will be collected.

Ordinary fare, 5c; 6 tickets for 25c, good from 6 a.m. to 12 p.m.

Workmen's fare, 5c, or 8 tickets for 25c, good from 5.30 to 8 a.m. and from 5.30 to 7 p.m., from Monday to Saturday inclusive. Sunday tickets, 8 for 25c, good from 5.30 a.m. to 12 p.m.

Children's fares, under 14 years of age, 10 tickets for 25c, bona fide students to be allowed this rate between 8 a.m. and 5 p.m. on school days; no double fare for children on main line on Sunday.

Night car fares, from 12 midnight to 5.30 a.m., 10c, good for a through ride.

The new schedule was discussed at a meeting of the Port Arthur Board of Trade, Mar. 6. Chairman Wideman and Secretary Rapsey, of the Utilities Commission, outlined the conditions existing on the street railway and the necessity for a change in fares. Discussion arose over the latter, the general consensus of opinion being that the fares should be raised high enough to make the road pay for itself, even if a 10c fare for all classes in each city be necessary. Mayor Cowan intimated that he would support at the meeting of the commission the resolution adopted by the joint committee from the Twin Cities, although it was hardly high enough in his estimation. A. W. Robarts suggested that a straight 5c fare for all might be a feasible solution. No resolutions were passed.

The City Council of Fort William passed a resolution Mar. 13, approving of the new fare schedule as recommended by the commission of both cities meeting in joint session.

Vancouver's Electric Railway Service and the Jitneys.

C. A. Abraham, who went from Winnipeg recently to manage the Vancouver Sun, has written home impressions of the latter city, in the course of which he says: "A very striking feature is the street car service and the jitneys. The street car service leaves little to be desired. It is, in fact, one of the best in the Dominion and far surpasses the transportation provided in most of the other large cities. The company has invested capital of $48,000,000 on the mainland and on Vancouver Island. Probably it gets less for it and gives more than any other traction concern having a similar investment. In Vancouver the service is rapid and seems to meet the requirements of the people. The jitneys, at the same time, practically control the situation. They run where they like and when they like and into whom they like. Rarely anyone protests. A reverend gentleman did protest against their immorality in being unlighted, and the city has passed bylaws and restrictions—but the jitneys go on as ever. They take passengers from the street cars in fine weather, and then leave the whole business to the company when the weather is not good enough for a delicate auto driver to venture out. The street car company pays a percentage of its earnings to the city. It has to provide a certain service—which it does; it has to keep up streets and tracks and a hundred and one other things, while the jitney merely pays an auto license and gathers up passengers and takes in the money, apparently without restriction.

Brantford Municipal Ry's Report.

The Brantford, Ont., Railways Commission presented the following report to the City Council recently:

On Jan. 26, 1916, service ceased over the Paris-Galt section of the Grand Valley line, consequent upon the sale by the city to the Lake Erie & Northern Ry. Co., but notwithstanding that about 14 miles less line were under operation by the Commission during 1916 than in 1915, the revenue increased from $95,898.76 in 1915 to $97,737.98 in 1916, the shrinkage on the Grand Valley Line being more than offset by the gain on the city lines. The passenger earnings per mile run increased on the city lines from 16.3c in 1915 to 20.7c in 1916, and on th Valley line from 25.9c in 1916 to 29.6c in 1916. The operating expenses on the other hand decreased from $74,467.57 in 1915 to $68,369.35 in 1916. The surplus of operating profit, being the revenue less all operating expenses, was, in 1915, $21,431.19, and in 1916, $29,368.63.

The interest and sinking fund required to be met was $24,564 in 1916, against $22,980.75 in 1915, the increase being caused by all the debentures having been disposed of and interest paid thereon. A new charge appears in the accounts of 1916 by reason of an agreement made by the commissioners with the council, and adopted Mar. 6, 1916, whereby they undertook to provide thereafter from revenue the annual sums necessary to meet the railway share of pavement instalments payable in the first instance by the city, such sums to be considered and treated as depreciation. This year $6,000 was thus assumed. The net result of the year's operations is therefore a deficit of $1,195.37, compared with $1,549.56 in 1915, notwithstanding the increased sinking fund and the assumption of the $6,000 as above stated. The full amount of the interest and sinking fund has been paid over to the City Treasurer, and the full amount of the interest on the $125,000 bonded debt has been promptly met. The city lines have been extended during the year to the new munition plant; a new snow sweeper has been procured and other minor improvement effected.

The special attention of council is called to the following matters arising from the commission's financial position: The sum invested by the city for property and the necessary supplies, stores, etc., for its operation, was on Dec. 31, 1916, $435,549.57. The capital liability by way of bands, debentures and maturing pavement instalments was, at the same date, $422,897.47, leaving a balance, not covered by bonds or debentures, of $12,652.10. The accumulated deficit of the operation since the commission took charge is $2,739.93. These two sums aggregate $15,392.03, and the council should provide funds for same in order to allow the commission to discharge its liability to the city treasury of $10,328.83 and to the general public of $5,068.20. Provision should be made by the council for funding the $12,652.10, either at once, or by including it in any vote submitted to the people for further extensions or improvements to the railway system. The deficit might be allowed to stand for the present the commissioners hope the property is now on a self-sustaining basis.

OPERATING ACCOUNT FOR 1916.

Earnings—		
Passenger, City lines		$63,916.38
Passenger, Grand Valley line		28,802.09
Freight		2,930.57
		$92,718.47
Miscelaneous		2,088.94
		$97,737.98
Expenditures—		
Power	$19,839.68	
Operating wages, maintenance and general expense	48,529.67	
		68,369.35
Gross operating profit		$29,368.63
Bond and debenture interest.	$19,750.00	
Sinking fund	4,814.00	
Instalment on pavement indebtedness, to be applied in lieu of depreciation*	6,000.00	
		30,564.00
Deficit		$ 1,195.37

*At the time of making this agreement it was confidently thought by the commission that the operating profit for the year would allow of the assumption of this item, but this expectation has not been realized, consequent upon the abnormal cost of supplies, increased wages paid car men and other employes, etc.

Passengers carried, city lines, 1,421,298; Grand Valley line, 180,011; total, 1,601,309. Earnings, city lines, $92,718,47. Car miles run, city lines, 308,645; Grand Valley line, 97,376; total, 406,021. Earnings per car mile, city lines, 20.7c; Grand Valley line, 29.6c. Expenditure, exclusive of interest, sinking fund or depreciation, per cent. of earnings, all lines, 69.9, against 77.6 in 1915.

Guelph Radial Ry.—The auditor's report on the corporation finances for 1916 shows that the profits for the year received by the city from the operation of the G.R.R. were $664.18.

The erection of a high level bridge between Windsor,Ont., and Detroit, Mich,. is being advocated in those cities; the bridge to be used for foot passengers, vehicle and electric railway purposes.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies:

	Jan. 1917	Jan. 1916	July 31, 1917, to Jan. 31, 1917	July 31, 1916, to Jan. 31, 1916
Gross	$627,130	$591,949	$4,065,920	$3,832,095
Expenses	496,651	477,927	3,395,735	3,363,229
Net	130,479	114,022	670,185	468,866

Cape Breton Electric Co.:

	Jan. 1917	Jan. 1916.
Gross earnings	$38,581.01	$34,120.37
Expenses	23,208.99	19,189.56
Net earnings	15,372.02	14,930.81

London & Port Stanley Ry.—Comparative statement for 6 months ended Dec. 31, 1916, and Dec. 31, 1915:

Gross earnings.	1916.	1915.
Passenger	$95,490.10	$64,407.67
Freight	74,999.71	69,534.63
Miscellaneous	7,721.94	5,228.70
	$178,211.75	$139,171.00
Operating expenses	103,633.65	98,396.72
Gross income	74,578.10	40,774.28
Fixed charges	42,687.42	36,444.94
Net income	$31,890.68	$4,329.34

Toronto Civic Ry.—Total revenue for February, $19,768.52, against $16,714.38 for February, 1916. Car mileage for February, 105,639; revenue passengers, 1,174,585.

Toronto Ry., Toronto and York Radial Ry., and allied companies.

	Jan. 1917	Jan. 1916.
Gross earnings	$1,002,469	$906,350
Expenses	531,568	472,293
Net earnings	470,901	434,057

Winnipeg Electric Ry.:

	Jan. 1917	Jan. 1916.
Gros searnings	$319,945	$297,560
Expenses	231,423	189,085
Net earnings	88,522	108,475

The Ontario West Shore Railway Fiasco.

A request was made in the Ontario Legislature, Mar. 5, for a return of correspondence in the government's possesssion, relative to the Ontario West Shore Ry., and the enquiry made on behalf of the municipalities concerned, and also as to what steps the government had taken to arrest J. W. Moyes, against whom charges of fraud had been made. The railway was to have been built between Goderich and Kincardine, and four municipalities guaranteed about $100,000 worth of bonds, with the idea that the trust company looking after the financial end of the transaction would see that the funds were not mishandled. They discovered later that about $126,000 had been misappropriated, and it was stated that after the matter had been taken up with the Attorney General, J. W. Moyes had gone north from Toronto, apparently for his health, and had since disappeared. The Attorney General stated that to bring down the papers asked for would defeat the purpose in sight—the arrest of the person concerned. In his opinion there was no doubt that the money was obtained by fraud. The government had not been notified until Moyes had been away from Toronto for three days. He claimed that the parties interested should have moved sooner, and stated that they had been trying to get back the money from Moyes. Three days after that Moyes had left Toronto, the government was asked to kep him under observation, but that his arrest was not desired until the Ontario Railway and Municipal Board had reported on the investigation.

Marine Department

Canada Steamship Lines, Ltd., Annual Report and Meeting.

The following report was presented at the annual meeting in Montreal Mar. 7:

The improvement in the company's business noted in our last annual report has continued in a gratifying manner. Unprecedented developments in the world's affairs, as a result of the war, have given rise to many new and difficult problems in the management of your company. The high cost of fuel, foodstuffs and insurance, the difficulty in obtaining new tonnage and the scarcity of labor, not to mention the changing aspect of world politics, are matters which have caused grave concern. The management, however, has successfully met each situation as it arose and has brought about a result which your directors feel confident will meet with your approval. The balance sheet, operating and surplus accounts presented herewith will convey to you in a concise manner the result of your company's operations for the year under review and its present financial position.

Incidental to the operation of so large a fleet, your company suffered some losses from fire, stress of weather and the King's enemies, all of which were covered by insurance. Additional new tonnage has, however, been acquired and the position of your company in this respect is stronger than at our last annual report. Care has been taken to maintain in the highest state of efficiency, vessels, docks and other properties, and many improvements and betterments have been added. The work of consolidating the various units which were brought together when your company was formed has been completed, and your Vice President and Managing Director has reported that his efforts are being seconded by an efficient and loyal organization. During the year three payments of 1¾% were made in respect to deferred dividends on the preference shares, and a further payment on Mar. 1 of this year of 7% will leave a balance of 5¼% due, which, when paid, will wipe out all arrears to Dec. 31st, 1916.

Assets.

Vessels, as at Dec. 31, 1915		$17,628,237.32
Net additions for year, being excess of additions to fleet over vessels lost and sold		1,169,682.98
		$18,797,920.30
Real estate, buildings, docks and wharves, as at Dec. 31, 1915	$5,235,491.25	
Net additions for year.	95,623.28	
		5,331,114.53
Other fixed assets, as at Dec. 31, 1915	$ 536,645.53	
Net additions for year..	73,788.89	
		610,434.42
		$24,739,469.25
Less depreciation reserve		1,680,811.60
		$23,058,657.65
Cash in banks and on hand	$ 612,535.45	
Notes receivable $426,943.72		
Less proportion payable to trustees for deb. stock in respect of vessel sold 138,090.96		
	288,852.76	
Accounts receivable, less reserve for doubtful accounts	1,413,169.86	
Adjusted partial losses due by underwriters.	224,285.32	
Insurance and other claims — estimated amount recoverable ..	565,677.13	
Interest receivable accrued	821.92	
Inventories of stores and supplies	326,777.52	
		3,432,119.96
Insurance unexpired	$ 508,111.00	
Repairs, etc., applicable to 1917 season	127,052.37	
Reclassification expenses of s.s. parima and Guiana, less proportion written off	67,248.80	
Miscellaneous	4,721.53	
		707,133.70
Investments at cost		93,738.50
Funds deposited with trustees for mortgage bonds and debenture stock	$1,307,387.56	
Adjusted losses due by by underwriters payable to trustees	101,598.00	
Notes receivable payable to trustees in respect of vessel sold..	138,090.96	
		1,547,076.52
Sinking fund—debenture stock at par and cash held by trustes		290,048.14
Organization expenses, less proportion written off		172,772.30
Discount on debenture stock, less proportion written off		27,765.19
		$29,329,311.96
Leases, contracts and goodwill		8,589,646.79
		$37,918,958.75

Liabilities.

Capital Stock—		
125,000 shares 7% cumulative preference stock		$12,500,000.00
120,000 shares common stock		12,000,000.00
		$24,500,000.00
Funded debt—		
First mortgage bonds	$2,205,706.67	
5% debenture stock $7,045,506.66		
Less amount deposited as security for loan 649,200.00		
	6,396,306.66	
Loan secured by debenture stock and investments	600,000.00	
		9,202,013.33
Notes payable	$ 421,032.41	
Accounts payable	1,298,914.30	
Bond and other interest accrued	140,516.91	
Business profits war tax	404,545.58	
		2,265,009.20
Reserves—		
For freight and other claims	$ 20,000.00	
For premium on redemption of Richelieu & Ontario Navigation Co. bonds	21,048.74	
Surplus arising from sinking fund purchases of debenture stock	62,662.21	
		103,710.95
Surplus		1,848,225.27
		$37,918,958.75

Note—Cumulative preference stock dividends in arrear, $1,531,250.00.

Operating Account for year 1916.

Operating Revenue—		
Vessels		$11,819,539.09
Docks and wharves		172,472.36
Miscellaneous		65,239.90
		$12,057,251.35
Other revenue		64,877.26
Total revenue		$12,122,128.61
Expenses		8,062,583.64
Net earnings		$ 4,059,544.97
Interest on mortgage bonds	$ 125,051.30	
Interest on debenture stock	317,993.02	
Other interest	15,319.73	
Special bonus to employes	40,140.07	
Reserve for depreciation	805,309.76	
Reserved for doubtful debts and claims	27,500.00	
Directors' fees	15,156.62	
Reserve for business profits war tax	322,046.88	
		1,668,517.38
Profit for year		$ 2,391,027.59

Surplus Account, Dec. 31, 1916.

Balance at Dec. 31, 1915		$ 20,883.59
Profit for year 1916	$2,391,027.59	
Net profit on sales, etc., of fixed assets	179,979.79	
	$2,571,007.38	
Deduct proportion of of following charges:—		
Organization expenses	$86,387.36	
Discount on deventure stock	1,028.34	
	$87,415.70	
Dividends 3, 4 and 5 paid on cumulative preference stock	656,250.00	
	743,665.70	
		1,827,341.68
Surplus as per balance sheet		$1,848,225.27

James Carruthers, President, in moving the report's adoption, said: I might be pardoned if I mention the fact that the faith of those who have stood by our undertaking in the past has been amply justified. You who have furnished the capital, and your directors and management, who have devoted themselves to the welfare of our company, may well feel satisfied with the results so far accomplished. There is much, however, still to be done in developing existing trade routes and establishing new ones. The increased earnings are made up from nearly all branches of the service, but particularly from the operation of vessels on the high seas, and this field of development is practically unlimited.

The proportion of expenses to earnings continues to decrease steadily, showing that overhead expenses and operating costs are being kept down. The figures for the past three years are as follows: 1914, 80½% 1915, 71%; 1916, 67%. This decrease in operation has not been made by allowing the fleet to run down. We have kept our vessels, docks, etc., in good shape and have spent considerable amounts on same.

In the balance sheet there is an entry showing the amount of dividend arrears, in respect to the preference shares, viz., $1,531,250. Of this $875,000 has since been paid off, and I fully expect that the balance still due will be paid off at an early date. It is the intention of your directors to endeavor to build up a reasonable reserve, and also to provide for as much working capital as possible. This latter is a necessity caused by the expansion of the company's business. There seems to be no good reason why present conditions in our business should not continue for a long time to come. For 1917 I feel confident that we will do at least as well as we did in 1916. The quantities of ore, coal and other commodities to be moved are enormous and the amount of grain at the head of the lakes, waiting for the opening of navigation, is larger by several million bushels than it was at the same time last year. The general crops in the northwest, and wheat in particular, were largely underestimated. Instead of between 150,000,000 and 200,000,000 bush. of wheat, it is now known that the yield was approximately 225,000,000 bush. This, even at the price of $1.50 a bush., means over $100,000,000 more to our western farmers than was anticipated. Owing to the high prices all over the world for food-

stuffs of every description, and the enormous demand from Europe, there is the greatest possible incentive to our farmers in the east, as well as in the west, to produce as much as possible of everything in the way of staple foodstuffs: I do not doubt that our farmers will take the fullest advantage of the situation, benefiting themselves and the country at the same time, and I feel confident that, with favorable weather conditions, Canada should, in 1917, raise the largest crop in her history. During the year the number of shareholders in the company increased by over 33%. I have found the spirit of co-operation and devotion to the company's interests most marked among all the officers and employes.

J. W. Norcross, Vice President and Managing Director, in seconding the motion, said: It is hardly necessary for me to elaborate on the conditions which made it possible for us show the earnings set forth in the annual statement. The conditions which had to be met and overcome would require considerable detailed explanation. I will, therefore, simply pass over all detail and give a resume of the business done by the company for the past year. The inland freight service showed considerable improvement and the rates held fairly steady throughout the entire season. While the operating costs were higher than in 1915, our net earnings were considerably higher, and altogether showed very satisfactory results. This portion of the fleet is in excellent physical condition, and when putting these vessels into winter quarters, we took the opportunity to fit them out ready for business in the spring, so that no matter what date navigation opens our fleet will be ready for work. The passenger branch of the service showed a gross increase over the year previous, and, notwithstanding the difficulties and increased expenditures in the cost of operating, through the scarcity of labor, food and fuel, the net earnings have proved larger in proportion than in 1913, which was considered the banner year of the old Richelieu & Ontario Navigation Co.

Our ocean service, including the Bermuda and West India service, has shared in the general prosperity of ocean carriers, with the exception of the s.s. Bermudian. We did not make the enormous profits in this service that were made by Trans-Atlantic liners, for the reason that ours is a regular service, and during a portion of the year the ships came north with very little cargo, and the rates have only been incrased as necessity required. During the off sugar season, our vessels could have made larger profits by trading in the Trans-Atlantic service, but I am sure that the conservative policy of keeping them on the route will, in the future, give us better earnings for a longer period than if we had deserted the route during the short season that northbound cargoes were scarce. The portion of our fleet which formerly operated on the lakes, and which we fitted out for ocean service, has done well, and while, for the first two years, we paid a very high marine risk insurance on these ships, in some cases three times the regular rate, we now feel that with the money laid out as suggested to us by classification societies, we are about to largely improved physical condition of the vessels. Every vessel which we have at sea is in first class condition, and unless lost through war risks, will no doubt return handsome profits for the coming year. During 1916 we lost the s.s. Empress of Fort William and the s.s. Empress of Midland through hitting mines in the English Channel, but there were no lives lost. These ships were fully covered with war risk insurance and have been replaced with no loss to the company.

I do not think it advisable to forecast the possible earnings of the company for 1917, except to say that, up to the present, they have fulfilled our expectations. The company's financial condition and the physical condition of its property is excelelnt. I wish to thank the heads of the departments and their staffs for the excellent work and co-operation which they have shown during the past year, as this, to a large extent, has made is possible for us to put before you such a statement as was shown you today.

The directors were re-elected, except Sir H. Montagu Allan and Æmilius Jarvis, of Toronto, both of whom retired. Sir Montagu Allan, who has been in England for the past two years, will act as one of the London advisory committee. W. E. Burke, Assistant Manager, and F. S. Isard, Comptroller, were elected to fill the vacancies on the board, which is now constituted as follows: James Carruthers, President; J. W. Norcross, Vice President and Managing Director; C. A. Barnard, K.C., R. M. Wolvin, J. C. Newman, H. B. Smith, M. J. Haney, Hon. J. P. B. Casgrain, J. E. Dalrymple, G. H. Smithers, D. B. Hanna, J. P. Steedman.

Alaskan Fishing Fleet.—Owing to the automatic adjournment of the U. S. Congress, Mar. 3, a bill dealing with fisheries questions off the British Columbia-Alaska coast, and affecting the fish shipping industry at Prince Rupert, and the transportation of fish through Canada to the U. S., was not dealt with. It is stated in Washington, D.C., that it is believed the effect of the Canadian laws, if not offset, will be to bring the Alaskan fishing fleet, operating off Ketchikan, under Canadian registry. The U. S. Shipping Board has refused an application to transfer the motor driven fishing vessel Venture from the U. S. to the Canadian register, stating that while the Canadian regulations apparently offer tempting inducements for such transfers, they do not in reality give U. S. citizens an opportunity for free competition in the fisheries trade, but rather subject consumers of fish in U. S. territory through Canadian ports to the possibility of monopolistic price manipulation.

Salvage Claim Against Lloyd's. — The Larder Bros. Wrecking Co., Halifax, N.S., is claiming, in the Nova Scotia Supreme Court, from the committee of Llyod's, and the individual members thereof, £20,000, being balance of money deposited with the committee under a salvage agreement between Lloyd's, the master of the s.s. Arachne, and the wrecking company. The s.s. Arachne, a British vessel, stranded near Point Plate, Miquelon Island, June 20, 1916, the master being censured and reprimanded severely for the non-accomplishment of simple navigation principles, which, although ordinary, are necessary.

Classification of Vessels.—U. S. underwriters have decided that all wooden and composite vessels are to be reclassed after inspection by the American Bureau of Shipping, prior to loading of the first grain cargo, and inspected again prior to Aug. 31, and prior to loading after an accident to a vessel. The season for wooden vessels will be from May 1 to Oct. 31. No change has been made the tariff rates.

U.S. Shipping on the Great Lakes.

The exceutive order of the United States prohibiting the transfer of U. S. ships to foreign registry came a trifle late. It is but another illustration of locking the door after the horse has been stolen. Following the passage of the Seamen's Act, the Trans-Pacific fleet of U. S. bottoms was sold, and in compliance with the Panama Canal Act, Great Lakes shipping was greatly decimated. In the latter case many vessels were sold by U. S. owners to British companies, the vessels being changed to British registry. Notwithstanding the fact that Canada has given nearly 100,000 tons of Great Lakes shipping to ocean services of the United Kingdom, the Dominion still has 218,019 tons of registered steel vessels on the Great Lakes, and is building many more vessels. The decline in U. S. tonnage on the Great Lakes is particularly unfortunate when bulk cargo was offering in great quantities on every pier and the freight rate per ton advanced all the way from 50 to 75%. It has been estimated that U. S. laws have been responsible for driving from the Great Lakes many thousand tons of steel ships badly needed at the present moment. While the attractive prices offered for tonnage has drawn an additional large number of vessels from that service, as far as the law and its effect are concerned, not one individual shipper, either farmer, manufacturer, merchant or middleman, has been helped to the value of a postage stamp, and under the new conditions freight rates as shown have more than doubled, but the controlling rate making power can disregard any ruling of any U. S. regulating commission. — Railway and Marine News, Seattle, Wash.

The Timiskaming Navigation Co.'s property, including four steamboats, Jubilee, Meteor, Silverland and Temiscamingue, and wharf and dock accommodation at Haileybury, has been sold by Jas. Hardy, Toronto, liquidator, to T. A. Simard, Ville Marie, Que. The company assigned about two years ago, and since then the property has been managed by P. Gibbons, on behalf of the liquidator. The Jubilee is a screw driven vessel with engine of 10 n.h.p., built at Kingston in 1897; length 84.2 ft., breadth 15.4 ft., depth 5 ft.; tonnage, 117 gross, 78 register; the Meteor is screw driven by engine of 165 n.h.p., and was built at Opemican, Que., in 1897; length 130.5 ft., breadth 27 ft., depth 7.4 ft.; tonnage, 299 gross; 204 register; Silverland is screw driven by engine of 13 n.h.p., and was built at Haileybury in 1909; length 85.4 ft., breadth, 17 ft., depth 6.7 ft.; tonnage, 92 gross, 52 register; the Temiscamingue is screw driven by engine of 21 n.h.p., and was built at Timiskaming, Que., in 1898; length 133 ft., breadth 22.5 ft., depth 6.5 ft.; tonnage, 295 gross, 213 register.

The Shipmasters and Officers Association of Canada has ben organized in Vancouver, B.C., to promote the welfare and interests of masters and officers in the mercantile marine service. Law fees will be paid by the association in the event of any member requiring legal assistance in collision and other marine cases in which he is involved. The entrance fee is, for masters $10 and for officers $8, in addition to which there is a monthly fee of $1. Commander C. Unwin, R.N.R., 539 Pender St. West, Vancouver, is the Secretary.

Coast, Lake and River Steamship Officers for 1917.

The following appointments made by navigation companies, engaged in Canadian navigation, for their various steamships and tugs, have been reported to Canadian Railway and Marine World. The first column gives the names of the vessels, the second, those of the captains, and the third, those of the chief engineers.

ALGOMA CENTRAL STEAMSHIP LINE, LTD., SAULT STE. MARIE, ONT.

Agawa	A. McIntyre	J. L Smith
J. Frater Taylor	R. H. Boyle	L. B. Cronk
Thos. J. Drummond	J. D Montgomery	W. T. Rennie
W. C. Franz	W. C. Jordan	G. Sylvester

BASSETT STEAMSHIP CO. LTD., TORONTO

Mariska	Jas. Woolner	W. C. Spencer

BATHURST LUMBER CO. LTD., BATHURST, N. B.

Betty D.	A. Hains	R. Kane
Nipisiguit	F. Curwin	L. Spragge

BAY OF FUNDY AND MINAS BASIN STEAMSHIP CO., LTD., MARGARETVILLE, N.S.

Brunswick	H. W. Moore	A. Harris
Margaretville	S. Baker	L. Harris
Ruby L.	C. D. Baker	A. B. Dorman

BOWRING BROS., ST. JOHN'S NFLD.

Eagle	C. C. Couch	A. McKinlay
Florizel	W. J. Martin	J. V. Reader
Hawk	F. Smith	J. Fitzgerald
Portia	J. W. Kean	A. Smith
Prospero	A Kean	J. McKinlay
Ranger	W. James	E. Perez
Terra Nova	N. J. Kennedy	A. F. Osmond
Viking	C.F. Taylor	C. N. Lewis
Zelda	W. White	W. Squires

BUFFALO AND FORT ERIE STEAMSHIP CO., NIAGARA FERRY AND TRANSPORTATION CO., BUFFALO, N.Y.

O. Bedell	W. H. Delaney	C. Beach
Orleans	E. H. O'Neill	
	R. J. Ward	H. Shouldice

BURNHAM, MORRILL AND CO., HALIFAX, N.S.

Robie M.	R. A. Hines	.....

CANADA ATLANTIC AND PLANT LINE STEAMSHIP CO., HALIFAX, N.S.

Halifax	H. Doyle	R. McKay

CANADA ATLANTIC TRANSIT CO., LTD., MONTREAL

Arthur Orr	J. H. Fleming	D. Mance
George N. Orr	J. Simons	J. B. Wellman
Kearsarge	H. Jaenke	F. Wilks

CANADA SHIPPING CO. LTD., MONTREAL

Cabotia	R. Laing	J. R. Ferguson
Compton	B. Bowen	L. Smith
Florence	V. Gendron	S. Legendre
J. H. Hackett	J. Thibault	A. Legendre
James W. Follette	C. A. Mahoney	M. J. McFaul
John B. Ketchum II	W. J. Jewitt	J. Walker
Margaret Hackett	M. Allison	O. Croteau
Robert R. Rhodes	W. H. Ransome	F. A. Collier

CANADIAN NORTHWEST STEAMSHIP CO. LTD., TORONTO

Atikokan	W. J. Brown	J. H. Louden
George A. Graham	J. A. Ewart	J. B. Polding
Paipoonge	P. McIntyre	H. H. Moore
Thunder Bay	H. Finn	C. Kent

CANADA STEAMSHIP LINES LTD., MONTREAL

America	R. H. Carnegie	.....
Belleville	W. Bloomfield	John Kennedy
Bickerdike	T. H. Johnston	D.S. LaRue
Boucherville	A. Laviolette	C. Hamel
Cadillac	W. Beatty	Jas. Kettles
Calgarian	R. Pyette	A. L. Black
Cayuga	C. J. Smith	.....
Chippewa	W. Malcolm	.....
City of Hamilton	O. Patenaude	W. Dungan
City of Ottawa	J.L. Baxter	O. E. Holmes
Corona	B. A. Bongard	J. Kennedy
Doric	R. McIntyre	Jos. Aston
E.B. Osler	C. E. Robinson	W. Robertson
Emperor	J. F. Davis	G. N. Smith
Fairfax	M. Hefferhan	C. LaVallee
Haddington	R. J. Wilson	C. Leriche
Hamiltonian	.....	A. E. Kennedy
Ionic	O. Wing	A. E. Crosthwaite
Iroquois	J. H. Hudson	J. E. Readman
J. H. G. Hagarty	G. W. Pearson	C. Robertson
Kingston	E. Booth	W. Chipman
Louis Phillippe	H. Mandeville	A. Chayur
Macassa	J. Henderson	E. A. Prince
Magnolia	.....	T. Hazlett
Martian	A. B. McIntyre	R. Foote
Midland King	P. McKay	Jas. McGregor
Midland Prince	W. H. Anderson	J. A. Pickard
Montreal	F. X. LaFrance	N. Beaudoin
Pierrepoint	J. E. Ouellette	.....
Quebec	J. Rinfret	J. Matte
Ramona	E. M. Charlebois	.....
St. Irenee	.....	C. Bonin
St. Lawrence	John Bertrand	.....
Saguenay	J. Simard	A. Godin
Sarnian	D. W. Burke	I. J. Boynton
Seguin	.....	J. B. McLaren
Sir Trevor Dawson	H. Hinslea	J. Grant
Stadacona	G. H. Page	W. W. Norcross
Syracuse	L. Legendre	.....
Tadousac	.....	G. Gagnon
Thousand Islander	O. H. Kendall	.....
Three Rivers	A. Mondor	C. Gendron
Toronto	J. J. Jarrell	D. J. Leslie
W. D. Matthews	A. E. Stinson	W. Reid
W. M. Egan	N. Hudgins	J. A. Connor
W. Grant Morden	N. Campbell	R Chalmers
Wyoming	H. L. Beauvais	E. Meek

CANADIAN PACIFIC CAR AND PASSENGER TRANSFER CO. LTD., PRESCOTT, ONT.

Charles Lyon	W. Henry	L. Black

C. P. R. BAY OF FUNDY SERVICE, ST. JOHN, N.B.

Empress	A. MacDonald	J. M. Pendrigh

C. P. R. DETROIT RIVER CAR FERRIES, WINDSOR, ONT.

Michigan	H. Farrow	F. Merrill
Ontario	R. Brown	C. A. Sullivan

C. P. R. GREAT LAKES SERVICE, PORT MCNICOLL, ONT

Alberta	F. J. Davis	C. Butterworth
Assiniboia	J. McCannel	A. Cameron
Athabasca	M. McKay	G. D. Adam
Keewatin	M. McPhee	W. Lewis
Manitoba	J. McIntyre	R. Sinclair

CANADIAN TOWING AND WRECKING CO. LTD., PORT ARTHUR, ONT.

A. B. Conmee	W. Nuttall	Lloyd Williams
A. F. Bowman	H. Gehl	D. Moore
James Whalen	A. Morrison	H. Cross
Sarnia	A Fader	J. Farquharson
Siskiwit	W. Grrick	W. Faloona

HUGH CANN AND SONS LTD., YARMOUTH, N. B.

Bruce Cann	I. A. Banks	H. Goodwin
Hugh D	E. Smith	H. Doane
John L. Cann	A. L. McKinnon	J. Nixon
Latour	F. E. Smith	C. R. Weddleton
Mary H. Cann	F. L. Nickerson	W Amiro
Percy Cann	J. R. Durkee	D. E. Read
Robert G. Cann	W. E. Morris	B. Lumsden
Wanda	U. J. d'Entremont	A. Rogers

CAPE BRETON ELECTRIC CO. LTD., SYDNEY, N.S.

Electronic	I. H. Lewis	B. Dickson
Hygeia	A. McLeod	.....
Peerless	G Dicks	J. B. Weeks

CENTRAL CANADA COAL CO. LTD., BROCKVILLE, ONT.

Samuel Marshall	W. A. Tulloch	W. H. Keir

CHATHAM NAVIGATION CO. LTD., CHATHAM, ONT.

Ossifrage	T. J. Stockwell	G. Peel

CHICAGO, DULUTH AND GEORGIAN BAY TRANSIT CO. CHICAGO, ILL.

North American	E. Taylor	J. F. Buritz
South American	G. M. Cummings	W. F. Johnson

CLEVELAND AND BUFFALO TRANSIT CO., CLEVELAND, OHIO.

City of Buffalo	W. H. Smith	D. Donaldson
City of Erie	E. S. Pickell	G. Turnbull
Seeandbee	H. McAlpine	C. Lorimer
State of Ohio	A. H. MacLachlan	A. Greb

COASTWISE STEAMSHIP AND BARGE CO., VANCOUVER, B.C.

Amur	S Snoddy	R. Middlemass
British Columbia	J. M. Hewison	J. Ellison
Henriette	O. Buchholz	A Hewitt
Turret Crown	J. Park	J. McG. White

FARRAR TRANSPORTATION CO. LTD., TORONTO

Collingwood	JohnEwart	Duncan McLeod
Meaford	J Lewis	T. W. Verity

G. T. R. CAR FERRIES, WINDSOR, ONT.

Great Western	O. Lalonde	J. Ladds
Huron	M. Bausette	A. Cook
Lansdowne	H. Oldenherg	W. Belsom

G. T. R.–WABASH RY. CAR FERRIES, WINDSOR, ONT

Detroit	F. A. Huntoon	H. Lowry
Transfer	G. Honner	W. Taylor
Transport	W. Norvell	F Robinson

GRAND TRUNK PACIFIC COAST STEAMSHIP CO., LTD., VANCOUVER, B.C.

Prince Albert.	W. S. Morehouse	A. S. Munro
Prince George	D. Donald	I. C. Handy
Prince John	A. M. Davies	R. Know
Prince Rupert	D. Mackenzie	R. Bell

GREAT LAKES TRANSPORTATION CO. LTD., MIDLAND ONT

America	A. Monck	C. Doctrine
Breezit	W. Lenton	C. A. McWilliams
Glenfinnan	A. R. McLeod	W. J Holmes
Glenlivet	F. Burke	G. Price
Glenlyon	A. Hudson	D. Sinclair
Glenshee	W. A. Lavigne	F Goodwin
Mack	W. Ferguson	.....
Major	S. Corson	P. Eagles
Stewart	J. G. McCarthy	Jas. Wilson

HALIFAX AND CANSO STEAMSHIP CO. LTD., HALIFAX, N.S.

Scotia	Jas. Schmeisser	Jos. Clark

HALIFAX AND INVERNESS STEAMSHIP CO. LTD.

Strathlorne	J. Munro	J. Latham

HALIFAX AND SHEET HARBOR STEAMSHIP CO. LTD. HALIFAX, N.S.

Margaret	W. Cooper	J. Jackson

GEORGE HALL COAL CO., OGDENSBURG,, N.Y.

Geo. L. Eaton	W. B. Russell	W. J. Brown
Hecla	T Lago	.....
Iselin	D. Hourigan	E. B. Barker
Jones	H M. Russell	W. Thomson
Kendall	J. A. Woods	.....
MacTier	S. V. Anderson	J. W. Estes
Mercur	S. LeBeau	B. Manwaring
Robinson	JohnPowers	R. J. Jardin
Rugee	H. M. Russell	John Cline
Sherman	G. Abbott	.....

HUDSON'S BAY CO. WINNIPEG, MAN.

Athabasca	–. Haight	T. Sutherland
Fort McMurray	–. Mills	W. Johnson
Inenew	–. Redfearn	.....
McKenzie River	– Patton	G. A. King

IMPERIAL OIL CO. LTD. TORONTO

Imperial	H. C. Mimms	G. E. Down
Imperoyal	John Wilkie	J. F. Smith
Iocolite	R. Flack	A. Fleming
Iocoma	G. T. Cross	C. Arnberg
Royalite	N. Scott	J. F. A. Prysz
Sarnolite	R T. Jones	J. Spencer

INTERNATIONAL TRANSIT CO. LTD., SAULT STE. MARIE ONT.

Algoma	F. Frech	C. H. Innes

ISLAND TUG CO. LTD., CHARLOTTETOWN, P.E.I

Harland	J. T. McLaine	A. Roebuck

KEYSTONE TRANSPORTATION CO. LTD., MONTREAL

Keybell	G. Bunting	W. H. Jennison
Keynor	Jas Martin	John Robertson
Keyport	John Mullen	R. J. Muchmore
Keyvive	L. Beaupre	Jas. Boak
Keywest	A. Barrett	R. Knight

LAKE COMMERCE LTD., TORONTO

Arabian	H. A. Leaney	D. S. Crawford

LAKE ERIE NAVIGATION CO. LTD., WALKERVILLE, ONT

Maequetteand Bessemer No. 1	Jas. Patterson	H. Culp

MAGNETAWAN RIVER AND LAKE STEAMBOAT CO. LTD., BURKS FALLS, ONT

Armour	E. Pinch	R. Johnston
Glenada	W. M. Kennedy	J. Kennedy
Gravenhurst	S. Carswell	J. Stoner
Wanita	W. Keetch	T. Chambers

LA CIE. MARITIME ET INDUSTRIELLE DE LEVIS LTD LEVIS, QUE.

Champion	D. Lemay	C. Barras
Frontenac	Jos Plante	P. Plante

MARITIME STEAMSHIP CO. LTD., BLACKS HARBOR, N.B.

Connors Bros.	E H. Warnick	G. Cowie

MARQUETTE AND BESSEMER DOCK AND NAVIGATION CO WALKERVILLE, ONT.

Marquette and Pessemer No. 2	J. VanBuskirk	T. Elliott

MATHEWS STEAMSHIP CO. LTD., TOTONRO

Easton	D. N. Laroche	J. T. Myler
Edmonton	C. R. Albinson	F. A. Pringle
Malton	D. A. Kennedy	G. H. Finn
Masaba	J. A. Smith	W. Whipps
Riverton	.....	J. G. Fisher
Steelton	W. J. Kirkwood	J. A. McGill
Yorkton	R. Alexander	D. McKenzie

MERCHANTS MUTUAL LAKE LINE LTD., MONTREAL

A. E. Ames	W. H. Montgomery	G. Jarrell
Beaverton	W. Brian	H. Myler
H. M. Pellatt	O. W. Patterson	W. Byers
Mapleton	A. F. McLennan	A. E. House
Saskatoon	N. McGlennon	J. A. McDonald

MONTREAL AND CORNWALL NAVIGATION CO. LTD., CORNWALL, ONT.

Britannic	A. Anderson	N. Marchand
St. Laurent	J. Leroux	A. Cote

NEWCASTLE STEAMBOAT CO. LTD., NEWCASTLE, B. N

Dorothy N	C. S. Amos	A. McLean

NIAGARA ST CATHARINES AND TORONTO NAVIGATION CO. LTD., ST CATHARINES, ONT

Dalhousie City	G. Blanchard	J. H. Brown
Garden City	J. W. Maddick	H. R. Welch

ONTARIO CAR FERRY CO. LTD. MONTREAL

Ontario No. 1	S. McCaig	D. L. Smyth
Ontario No. 2	F. D. Forrest	J. A. Nicoll

OTTAWA RIVER NAVIGATION CO. LTD., MONTREAL

Duchess of York	.....	N. Chartier
Empress	A. Blondin	A. L. deMartigny

OTTAWA TRANSPORTATION CO. LTD. OTTAWA, ONT

Dolphin	Z. Lavigne	D. Moranville
Florence	E. Lefebvre	A Madore
Glen Allan	A. G. Clark	E. Durocher
Hall	J. Barclay	J. Drury
Ottawan	A. Malette	N. Lavigne
Scotsman	E. Francoeur	V. Lavigne
Sir Hector	W. Mainville	Jas. Schryer

PAWNEE BOAT CO., PORT HURON, MICH

Pawnee	Jas. Cassin	M. Jamieson

PEACE RIVER NAVIGATION CO. LTD., EDMONTON, ALTA

Northland Call	S. J. Coolen	.....

PEMBROKE TRANSPORTATION CO. LTD., PEMBROKE, ONT

Oiseau	Jos. Tessier	J. Trottier

PENINSULA TUG AND TOWING CO. LTD., WIARTON, ONT

Crawford	W. D. Bain	R. H. Isbester
Homer Warren	F. Wood	W. C. Fox

PENNSYLVANIA-ONTARIO TRANSPORTATION CO., CLEVELAND, OHIO

Ashtabula	C. F. Meyers	S. M. Sylvester

RIVER LIEVRE NAVIGATION CO. LTD., BUCKINGHAM, QUE.

George Bothwell	G. N. Bothwell	G. Bothwell

J. F. SOWARDS, KINGSTON, ONT.

H. N. Jex	M. Shaw	W. McCabe
M. A. Lydon	P. Clark	M. Moon
Shanly	J. F. Sowards	John Maloney

SPARROW LAKE STEAMER LINE, SPARROW LAKE, ONT

Glympse	A. F. Stanton	G. T. Stanton

CITY OF THREE RIVERS, QUE.

Le Progres	W. W. Lewis	A. Frenette

TORONTO, HAMILTON AND BUFFALO NAVIGATION CO., HAMILTON, ONT.

Maitland No. 1	B. T. Haagenson	C. E. Sylvester

VICTORIA NAVIGATION CO LTD., THURSO, QUE.

Victoria	F. Elliott	P. Belanger

Shipping Federation of Canada's Annual Meeting.

At the annual meeting in Montreal recently, John Torrance, Chairman of the Executive Council, presided, in the absence of the President, A. A. Allan. The report showed that the regular line tonnage entered with the federation showed a decrease owing to the exigencies of war service, but the tramp tonnage entered showed an increase, which more than made up the loss of regular line tonnage, as follows:

	1915.	1916.
Regular line tonnage	510,070	474,636
Tramp tonnage	299,627	499,313
Tramp tonnage increase		199,686 tons
Regular line tonnage decrease.....		35,434 tons
Net increase in tonnage		164,252 tons

Following are extracts from the President's report: The first steam vessel to arrive from the sea was the Italian s.s. Bayern, on May 1, three days later than the first arrival in 1915. The last ocean vessel to depart was the Norwegian s.s. Begna with a full cargo of grain for the Belgian Relief Commission, which cleared on the morning of Dec. 3. Vessels from the upper lakes passed through the harbor, eastward bound, as late as the middle of December. The number of ocean vessels which arrived at Montreal during the season was 685, a decrease of 130 from 1915. The number of trans-Atlantic vessels which arrived showed an increase over 1915, but a serious falling off is recored in the coasting trade vessels, this being principally due to the scarcity of ocean tonnage, and vessels which formerly plied on the coasting trade have for the greater part left for other trades where higher rates are prevailing.

The passenger trade, both eastbound and westbound, was as good as could be expected, in fact, most of the passenger vessels on the route were at times overbooked on their eastbound voyages. High freight rates continued to be a factor, but taking the season as a whole, it may be recorded as a most erratic one for the lines trading to the port. Owing to the congestion of the ports in the United Kingdom and France, there was all through the season an uncertainty as to sailing dates. The volume of freight offering at times was more than bottoms could be procured to transport, and several lines had to charter outside steamers at abnormal charter rates to meet the demand of the exporters. Notwithstanding the volume of trade carried on during the season, speedy dispatch was given to all vessels entering the harbor, and no detention or congestion for any length of time occurred. Exports from Montreal showed abnormal increases in certain articles as compared with other years. Increases are noted in the following commodities: Grain, 28,422,275 bush.; flour, 2,962,775 sacks; eggs, 93,416 cases; cheese, 290,968 boxes; butter, 122,964 boxes. On the other hand, decreases in exports are noted in hay shipments of 740,434 bales, and apples, 19,187 barrels.

The standard of the pilotage district below Quebec has improved considerably during the past year. This is no doubt due to the energetic measures taken by the government to put the district on a sound footing, and it is our earnest hope that they will keep up this good work and help to efface the black marks which this district has placed on the route. The list of accidents on this route seem very large as compared with former years, but, with the exception of one or two cases, they were not of a serious nature, most of the vessels only suffering minor damages.

Various improvements in Montreal harbor were progressed with during the season. The high level quay at Victoria Pier was completed and formally opened to ocean traffic. The contract for the improvements proposed to be carried out at St. John, N.B., has been cancelled by the government, and there is very little prospect of it being renewed for some time. When the contract is renewed it is estimated that three years will be required to complete the work. The Quebec Harbor Commissioners are making considerable progress with the new works for the improvement of the harbor, and the two new sheds which are under construction are expected to be completed this spring. Satisfactory progress has been made on the government graving dock at Lauzon, Que., and the government has given an assurance that, barring any unforeseen incident, they expect to have the dock in operation at the opening of navigation, 1918.

The report made by the commission appointed by the Canadian Government on the water levels of the River St. Lawrence proposed to dam the river at certain points, with a view to incerasing the levels. The shipping interests did not look very favorably on this project, and, at considerable expense, obtained the opinion of three prominent engineers, who have had considerable experience in river hydraulics. They were of the unanimous opinion that damming the river would not increase the levels of the river to the extent proposed. Our engineers were also of the opinion that if these dams were constructed they would render navigation in the river extremely dangerous. Copies of the engineers' reports were forwarded to the government for their favorable consideration, and they have advised us that the proposed improvements as suggested by the Water Level Commissioners would not be proceeded with until the matter had again been further considered. I have lately come across an important report issued by the Chief of Engineers of the United States Army, regarding the diversion of water from Lake Michigan through the Chicago Drainage Canal. He points out that the volume of water which the State of Illinois is permitted to take from Lake Michigan is not to exceed 4,167 cu. ft. per second, but it is a well known fact that the sanitary district authorities have for years past been withdrawing a much larger amount. This represents a daily average flow of water from Lake Michigan of more than 690,000,000 cu. ft. a day, which is about equal to the entire low water flow of the Mississippi River at St. Paul. The continuous witdrawal of this volume of water, he estimates, will result in the lowering of Lakes Michigan and Huron to the extent of 5 in. or more, and of Lake Erie to nearly the same extent. To lower the levels of the lakes, as claimed above, would reduce the permissible load by 300 to 550 tons for lake vessels, and a great deal more for ocean vessels, and the International Waterways Commission places the loss to navigation interests at $1,500,000 a year. You will see the serious position we are in.

The following officers were elected for the current year: President, A. A. Allan; Chairman, Executive Council, John Torrance; Treasurer, J. R. Binning; other members of Executive Council: W. R. Eakin, R. W. Reford, A. Mackenzie, A. M. Irvine, D. W. Campbell. Assistant Treasurer, E. W. Foulds. Manager and Secretary, Thos. Robb. Bill of Lading Committee: W. I. Gear, John Torrance, J. R. Binning and D. A. Watt. Harbor Equipment Committee: A. A. Allan, W. I. Gear and John Torrance. Quebec District Committee: W. M. Macpherson, Chairman; Harold Kennedy, D. Barrow, and G. B. Ramsay, Secretary.

Prince Rupert-Cleeve Collision Investigated.

An investigation was held recently at Victoria by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by Capts. W. Wingate and J. R. Stewart, as nautical assessors, into the cause of the collision between the Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Rupert and the steam tug Cleeve in Vancouver harbor, Dec. 28, 1916. The judgment declares that the cause of the collision was an error of judgment on the part of W. N. Coughlin, master of the Cleeve, in putting his helm hard a starboard just a few minutes before the impact, this action being, in the court's opinion, the initial cause of the casualty, and, secondly, to an entirely mistaken idea on the part of the Cleeve's master that his vessel had the right of way. The court, however, while imputing the sole blame for the collision on the master of the Cleeve, does not in any sense mean to reflect on his character and ability as a seaman, and under the circumstances thinks that a warning to be more careful in future will meet the requirements. No blame can in any sense be attached to Duncan Mackenzie, master of the Prince Rupert, nor to any of her officers or crew.

Capt. J. R. Stewart, in dissenting from this judgment, stated that he could come to no other conclusion than that the position of the vessels some time before the collision was that of passing vessels, and the onus of preventing such a crossing rested with the Prince Rupert, as she had the Cleeve on her starboard bow. The master of the Cleeve, on seeing that a collision was inevitable, reversed his engines and threw his helm hard a starboard, which was contrary to rule 21 of the regulations for preventing collisions at sea, and as his action failed to show that he in any way lessened the disaster, Capt. Stewart considered both vessels to blame for the collision.

A press dispatch from Victoria stated, Mar. 13, that the master of the Cleeve had appealed, and that a rehearing of the case had been ordered to be held by Capt. Chas. Eddie, Examiner of Masters and Mates, Vancouver.

The Safest Route to America.—Since the diplomatic break between the United States and Germany, a number of U. S. citizens in Germany have been thoughtfully considering what is the safest way to return home. The Trans-Siberian is conducting a special advertising campaign in Copenhagen, with a view of attracting a number of travelers to take the longest way round as the safest way home. After the war, this means of traveling will doubtless be very much developed, and a complete chain established round the world, and there is also very little doubt that the C.P.R. will be a considerable factor both in its development and operation.

Shipbuilding in Canada for the British and Canadian Governments.

The activity in Canadian shipbuilding yards, which has been very marked for the past two years, has been greatly increased by the action of the British and Canadian Governments, which have both taken steps to secure vessels to replace losses of cargo carriers, incurred through German submarine warfare and also to add materially to the number of steam fishing vessels, which are being so largely used for scouting and patrol purposes.

Jas. P. Esplen, who came out from Great Britain recently, and who is making his headquarters in New York, as representative of the British Shipping Controller, has arranged with the Imperial Munitions Board, at Ottawa, to secure all cargo vessels that may be available in Canada for delivery by May 31, 1918, and which are now completed, or under construction, or which it may be possible to build before that time. It is said that five vessels have already been arranged for from British Columbia builders and that probably about the same number will be secured from builders in Nova Scotia, Quebec and Ontario. Further orders will doubtless be placed.

A Steam Trawler, 125 feet long.

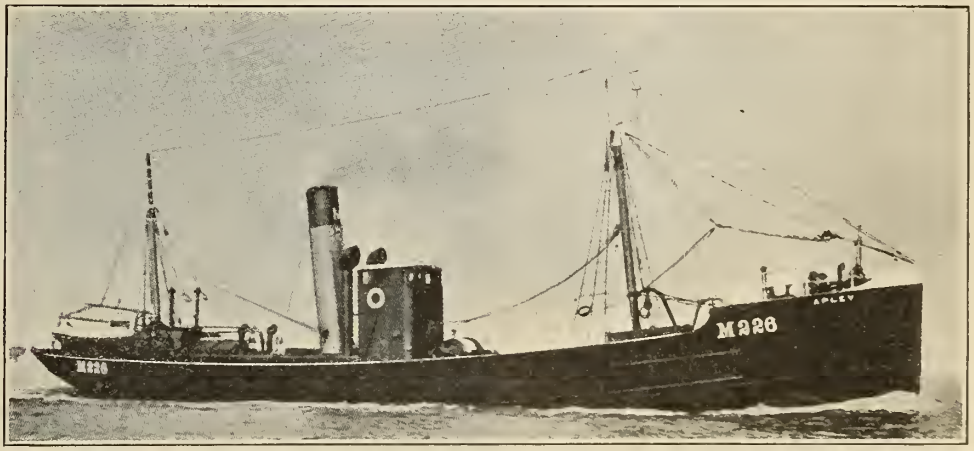
Towards the end of last summer, a demand sprang up for freight vessels for Norway. Between Sept. 19 and Nov. 15, 1916, the Dominion Government authorized the exportation to that country on completion, of 18 steel steam steamships, to be built by the following companies: Nova Scotia Steel & Coal Co., New Glasgow, N.S., 2; Canadian Vickers Limited, Montreal, 2; Polson Iron Works, Toronto, 4; Western Drydock & Shipbuilding Company, Port Arthur, 3; Wallace Shipyards, Limited, Vancouver, 4; Coughlan & Sons, Vancouver, 3. In addition to these the Thor Iron Works, Toronto, was authorized to export 2 steel freighters to the United States, on completion. It appears probable that the majority, if not all, of these 20 vessels, for the export of which licenses were granted, will be taken over for the British Government and it may be regarded as a certainty that for some time to come, at least, no more licenses for export will be issued. In addition to the above mentioned vessels, the Port Arthur Shipbuilding Co., which has succeeded the Western Drydock & Shipbuilding Co., is building 3 more of the Norwegian type, making 6 in all for that plant.

Steam Trawlers and Drifters.

The Dominion Government has undertake to have built in Canada, 36 steel steam trawlers, and 100 wooden steam drifters, of standard British types. The trawlers will be about 125 ft. long between perpendiculars, 23 ft. beam, and 13½ ft. deep. They will have triple expansion engines of about 500 h.p. The work of having these vessels built has been delegated, by the Naval Service Department, to J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd., Montreal, who is acting as Director of Naval Construction, and is being assisted by three of the company's other officials, W. E. Burke, Assistant Manager; F. S. Isard, Comptroller; and H. W. Cowan, Operating Manager. The orders are being distributed among existing shipbuilding plants from Quebec to Port Arthur, and it is probable that one or more plants which have not been in operation for some time will also be utilized. The materials, including engines and other machinery, are bought by the department and supplied to the builders.

In this connection it is interesting to note that Vice Admiral Sir Charles Coke of the Royal Naval Reserve, has arrived in Ottawa, with a staff of naval officers, to take command of the Canadian Naval Patrol Service on the Atlantic and Pacific. Admiral Coke relinquishes his Royal Navy rank temporarily, and becomes a Commander in the Canadian Naval Reserve, in charge of coast patrol.

The steam trawlers and drifters will, as before stated, be built on typical British lines, which are described as follows: Steam trawlers range from 110 to 150 ft. long, according to the fishing grounds which it is intended to work. The vessel is rigged with two masts and carries mainsail, mizzen-sail and foresail. The larger type of vessel has a raised quarter deck, extending sufficiently forward of the engine casing and wheel house for the trawl winch to be fitted thereon. There is a sunk forecastle, or a topgallant forecastle, under which the crew is berthed, while the captain and officers accommodation is aft, and there is a covered wheel house fitted with a telegraph communicating with the engine room. In some vessels accommodation is provided for the captain underneath the wheel house, which serves also as a chart room. Every available space on deck, and below deck, of a modern steam trawler is utilized to the greatest advantage, in fact the vessel may be truly termed a multum in parvo. The decks are crowded with contrivances, many of them very ingenious, for the convenient and expeditious working of the trawl gear, while below deck space has to be allotted for carrying the maximum amount of coal, for



A Steam Herring Drifter.

storing ice to preserve the catch of fish, and for storing the fish itself. The larger vessels are fitted with a reserve bunker, for use when steaming to distant fishing grounds. On the outward voyage the coal is worked from this bunker, so that the space can be used for storing fish on the homeward voyage. The fish room is divided up into several compartments, both vertically and horizontally, into which the various kinds of fish are carefully packed in ice, which preserves the catch in good condition during the return voyage, the ice being finely crushed before it is deposited in the ice room. In consequence of the vessels frequenting distant fishing grounds, sometimes as far as 1,000 or 1,200 miles from the home port it has been found necessary to adopt a system of insulation for the better preservation of the fish, especially during the summer. The entire structure is of unusual strength, the scantlings being considerably in excess of Lloyd's requirements for their 100 A1 class, while the vessels are double rivetted throughout, these precautions having been found necessary, to enable this class of vessel, not only to withstand all conditions of weather, but also the heavy strains consequent on having to tow or trawl with a maximum weight of gear, with all the contingent risks of fouling obstacles, such as sunken wreckage and protruding rocks at the sea bottom. For the same reason very powerful machinery is fitted, ample boiler power being an important consideration. The engines are of the triple expansion type, and the principal working parts are of excessive dimensions, to provide against the severe and sudden strains the machinery of necessity has to contend with. A very powerful double barrelled steam winch, capable of winding 2 steel warps, varying from 1,000 to 1,500 fathoms in length, is fitted in a convenient position, while, as before mentioned ,there are special deck fittings of a most ingenious design, for working the fishing gear, the nature and position of which demand very careful study.

Steam herring drifters are used, round the coast of Great Britain, in the herring fisheries. The modern steam drifter is a smart, sturdy, little craft with two masts, fore and mizzen, the foremast being arranged to lower when the vessel is drifting with the nets, so as to offer less wind resistance. The majority of steam drifters are now built of steel (but those to be built in Canada will be of wood) and vary from 80 to 99 ft. between perpendiculars by about 18 ft. breadth and 9½ ft. depth to top of keel. They are fitted with compound surface condensing engines of from 200 to 250 i.h.p. and attain a speed of from 9 to 10 knots. The general design of these vessels is a somewhat intricate study, owing to the great change of trim to which they are subject. To allow for this they are given a draft of from 10 to 11 ft. aft and only a 4 ft. forward. This deep aft is necessary, on account of the machinery and bunkers being placed abaft the centre line of the vessel, so as to leave sufficient space for fish and net rooms forward and thus prevent the vessel from going down by the head, when returning to market with a heavy load of fish. The fish room is divided off at each side into sections or "pounds," the object of this being to break up the bulk of the fish, which would otherwise be damaged by the vessel's motion. The only deck machinery is a self contained steam capstan, fitted near the bow of the vessel, for hauling in the rope to which the nets are attached. These are very ingenious machines of special design and workmanship. A comfortable cabin is provided in the after part of the vessel and the crew are berthed under the forecastle forward, although in some cases the whole of the crew are accommodated in the after cabin. A separate galley is provided on the deck at the after part of the engine room casing.

Additional Shipbuilding Plants.

There are a number of rumors as to the establishment of new shipbuilding plants, probably only a few of which have any foundation in fact.

An Ottawa press dispatch says that negotiations are in progress with a view to the establishment in Canada of a branch of another of the large British shipbuilding firms, that the matter is occupying Sir Robert Borden's attention and that the plant will probably be located on the Atlantic seaboard.

The St. John Shipbuilding Co. is being organized at St. John, N.B., and will, it is said, be incorporated by Dominion charter, with an authorized capital of $1,000,000. Thos. Nage is mentioned as the principal promoter.

Another project is spoken of for Newcastle, N.B., E. A. McCurdy being one of the promoters, and Lord Beaverbrook being mentioned as one of those interested.

International Shipbuilding Corporation Ltd. was incorporated recently, by Dominion charter, with authorized capital of $2,000,000, and office in Montreal. The incorporators are all in the office of H. A. Lovett, K.C., there. It is said that United States people are interested among others.

Hamilton Shipbuilding and Ferry Co., a subsidiary of Canada Steamship Lines, Ltd., is said to be contemplating establishing a plant at Hamilton, Ont., and in this connection has informed the city council that a condition is that it should be given a lease of Wabasso Park, with a right to operate a ferry service.

The Canadian Shipbuilding Co.'s plant, which was established at Bridgeburg, Ont., as a Canadian General Electric Co.'s subsidiary, and which has not been operated for the past 10 years, or so, will it is reported, be started up again.

The National Shipbuilding Co., Ltd., has been incorporated, with an authorized capital of $100,000, and office at Goderich, Ont., and will, it is said, take over the old Doty plant there.

Ocean & Inland Transportation Co., Ltd., has been incorporated under the Dominion Companies Act, with $40,000 capital, and office at Montreal, to own and operate steam and other vessels, and to carry on a general navigation, salvage and towage business. The incorporators are: W. R. L. Shanks, F. G. Bush, G. R. Brennan, A. G. Yeoman and H. W. Jackson, Montreal.

The Australian Navigation Co., Ltd., incorporated under the Nova Scotia Companies Act, with office at Halifax, N.S., has been removed from the register and the company dissolved, as it is not carrying on business, and is not in operation.

H. Savigny, bridge tender on the Welland Canal, has been awarded $300 for injuries sustained when the s.s. Mapleton collided with a bridge at Port Robinson last year.

The s.s. Westmount, which is being built for the Montreal Transportation Co. by the Collingwood Shipbuilding Co., will be launched on Apr. 5.

Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending Mar. 9, 1917.	Wheat.	Oats.	Barley.	Flax.	Totals.
Fort William—	bushels.	bushels.	bushels.	bushels.	bushels.
C.P.R.	4,558,271	2,126,112	228,587	.....	6,912,970
Consolidated Elevator Co.	1,033,785	238,839	38,772	179,761	1,491,157
Empire Elevator Co.	844,647	299,695	40,390	253,915	1,438,647
Ogilvie Flour Mills Co.	1,174,051	68,793	35,409	.....	1,278,253
Western Terminal Elevator Co.	907,767	296,006	35,367	479,357	1,718,497
G. T. Pacific	3,240,888	2,202,249	132,679	83,986	5,659,802
Grain Growers' Grain Co.	1,234,283	779,649	96,266	.....	2,110,198
Fort William Elevator Co.	832,943	456,514	28,425	63,118	1,381,000
Eastern Terminal Elevator Co.	1,038,088	575,238	28,163	.....	1,636,489
Thunder Bay Elevator Co.	675,836	381,238	60,376	66,087	1,383,537
Davidson & Smith	603,989	252,383	12,533	.....	868,905
Port Arhtur—					
Port Arthur Elevator Co.	4,690,718	2,559,421	417,452	166,039	7,833,630
D. Horn & Co.	267,784	143,401	29,852	140,473	581,510
Dominion Government Elevator	2,018,539	724,047	87,597	146,029	2,976,212
Grain afloat	89,245	101,331	.....	.....	190,576
Total terminal elevators	23,205,834	11,204,916	1,271,868	1,578,765	37,261,383
Saskatoon Can. Govt. Elevator	2,209,952	666,967	37,132	67,079	2,981,130
Moose Jaw Can. Govt. Elevator	2,072,845	571,857	21,491	97,634	2,768,827
Calgary Can. Govt. Elevator	976,023	1,166,620	99,835	12,379	2,254,857
Vancouver Can. Govt. Elevator	4,758	57,051	.....	.....	61,809
Total interior terminal elevators	5,623,578	2,462,495	158,458	177,092	8,061,623
Depot Harbor	.....	264,535	.....	.....	264,535
Midland—					
Aberdeen Elevator Co.	173,166	183,420	.....	.....	356,586
Midland Elevator Co.	17,961	.....	.....	.....	17,961
Tiffin, G.T.P.	459,288	532,971	93,109	.....	985,368
Port McNicol	469,391	834,848	51,104	.....	1,355,343
Collingwood	.....	8,450	.....	*17,793	26,243
Goderich	556,201	178,083	.....	.....	734,284
Western Canada Flour Mills Co.	262,260	37,402	.....	.....	299,662
Kingston—					
Montreal Transportation Co.	.....	144,992	.....	.....	144,992
Commercial Elevator Co.	2,240	58,804	.....	.....	61,044
Port Colborne	606,249	803,668	.....	.....	1,409,917
Montreal—					
Harbor Commissioners no. 1	12,939	135,463	17,886	.....	166,288
Harbor Commissioners no. 2	404,520	103,652	61,767	.....	569,939
Montreal Warehousing Co.	236,261	1,062,223	1,247	.....	1,299,731
Quebec Harbor Commissioners	2,960	245,548	.....	.....	248,508
West St. John, N.B.	111,570	2,957	29,916	.....	144,443
Total public elevators	3,315,006	4,497,016	255,029	*17,793	8,084,844
Total quantity in store	31,784,418	18,164,427	1,685,355	1,755,857	53,407,850

*Rye.

Reinforced Concrete Vessel Building in Norway.

A letter from the United States Consul-General at Christiania describes the application of reinforced concrete at a plant in Moss to the construction of vessels of relatively large displacement—up to 3,000 tons. The following quotations from the letter indicate the extent of the new development in the concrete field in Norway: "The inventor of this new style of vessel is said to be M. N. Fougner, an engineer, who claims to be able to build a ship of any size demanded. He is now building a lighter for a mining company at Sydvaranger for the oversea export of iron ore and the import of coal. The vessel, having a displacement of 3,000 tons, is to be ready before the end of this year. It is stated that these concrete ships can be sailed or engined like other vessels, and experts consider that a new epoch in shipbuilding has arrived.

"The ship, which arrived in Christiania last month, resembles a large barge, and is constructed entirely of concrete, with the exception of the ribs, which are of steel. This new method of constructing ships has attracted much attention. The Swedish Minister of Marine, M. Brostrom, one of Sweden's largest ship owners, immediately ordered a lighter of some thousand tons displacement, and he was present when it was launched at Moss. He was accompanied by four experts, all of whom expressed much satisfaction at the result. Two other lighters are on the stocks, and a large slip for a 4,000 ton craft is nearly completed. More than 200 men are working in the new yards, and five lighters have been contracted for in addition to the one completed and the two on the slips."

The Storstad-Empress of Ireland Collision.—The question as to whether the collision between the steamships Storstad and Empress of Ireland, which took place May 29, 1914, off Father Point, in the St. Lawrence, occurred within Canadian coastal waters or on the high seas, was settled by Mr. Justice MacLennan in the Admiralty Court at Montreal, Mar. 17, when he decided that it was more than three miles from the nearest coast line, and therefore on the high seas. This brings the settlement of claims under the Merchants Shipping Act of Great Britain, and the claims for loss of life have preference over all others. These total $3,069,483. In addition to these there are claims for lost property, and one of $2,500,000 by the C.P.R. for the loss of the Empress of Ireland and her cargo. The amount available for distribution, resulting from the sale of the tSorstad, is $175,000. The Storstad was engaged in the St. Lawrence coal trade for several years, and subsequent to the Empress of Ireland disaster, and to her sale, she was involved in another collision in the St. Lawrence. Since the commencement of the war she has been chartered for overseas trade, and was torpedoed by Germans, early in March, while en route to Rotterdam with supplies.

British Insurance of Neutral Vessels.—It is reported from England that Great Britain is making arrangements to insure all neutral vessels trading with the United Kingdom, for the purpose of stimulating trade. It is stated that a rate of 2 1/10% will be made, comparing with the 10% flat rate charged by underwriters in New York, for vessels sailing for belligerent countries.

U.S. Water Supply Regulations on Great Lakes Vessels.

The Secretary of the Treasury for the U. S. has issued a circular to owners, agents and masters of vessels operating on the Great Lakes concerning drinking and cooking water on such vessels as follows:

"On and after the official opening of navigation in 1917, any person, firm or corporation operating vessels in interstate traffic on the Great Lakes will be required to furnish on such vessels water for drinking or culinary purposes under one of the following conditions: (a) If water for drinking or culinary purposes is not obtained ashore, it must be treated by an approved method. (b) If water for drinking or culinary purposes is obtained ashore, it must be from an approved source. On and after the official opening of navigation in 1917, the piping system on all vessels must be so arranged that no connection can be made between the drinking water system and any other water system. On and after the official opening of navigation in 1917, an approved sign, reading 'Do Not Drink This Water,' must be properly placed at every tap or other outlet not connected with the drinking water system."

A question has arisen as to whether this regulation will apply to any Canadian vessel sailing out of a U. S. port. It would appear that it will apply only to vessels engaged in interstate commerce, and that unless the regulation is extended in its operation, it will not affect Canadian vessels which cannot engage in interstate traffic. The Dominion Marine Association is going into the matter with the U. S. authorities.

The Dominion Marine Association Expresses Its Appreciation.

The following is an extract from the Dominion Marine Association's executive committee's annual report, presented at the annual meeting in Toronto, Feb. 15, 1917, over the signatures of the President, W. E. Burke, Assistant Manager, Canada Steamship Lines, Ltd., and the Counsel, Francis King, M.A., of Kingston, Ont., and which was unanimously adopted:

"Canadian Railway and Marine World.

"The proprietor of this publication having formally offered the use of its columns for such items of news as the association would care to publish, your committee gratefully accepted the offer and adopted the following resolution:

" 'That in view of the thorough manner in which Canadian Railway and Marine World covers the marine field throughout Canada, the care which it exercises to secure accuracy, and the way in which its columns are freely at the Dominion Marine Association's disposal, it is hereby appointed the association's official organ.' "

St. John Shipbuilding Co.—It is reported that a company of this name, with a capital of $1,000,000, is in process of organization at St. John, N.B., and will shortly be incorporated under the Dominion Companies Act, to build, own and operate wooden vessels, and later on steel ones.

Stranding of the s.s. Prince John.

Fololwing is the judgment of Capt. C. Eddie, Commissioner, concurred in by Capt. J. McLeod and Commander J. T. Shenton, R.N.R., delivered at Vancouver, B.C., Feb. 28, regarding the stranding of the Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince John in Wrangell Narrows, Jan. 26. The court considers that navigation of the Wrangell Narrows must be regarded in the light of pilotage only, and it is quite evident that an intimate knowledge of the tides, buoyage and leading marks is an absolute necessity. From the evidence it would appear that the vessel was navigated with due caution, and the court considers that by keeping in view the water the vessel was drawing, 13½ ft., the state of the tide, and the weather conditions, the master was justified in running the narrows. The immediate cause of the stranding resulted from a slight error of judgment on the master's part in not allowing sufficiently for the strength and set of the tide in negotiating the channel between Green Island and the buoy off Rock Point. The presence of ice in the channel contributed in no small measure towards rendering the aids to navigation ineffective, especially the spar buyos. The conduct of the master and crew, after the stranding, was highly commendable, prompt action being taken to inspire confidence in the passengers and to ensure the vessel's safety. The court considers that there is no ground for dealing with the certificates or the master or first mate and returns them forthwith.

After War Demands on Atlantic Shipping.—A London, Eng., press correspondent cabled recently: "That it will take almost two years to return to Canada, troops and stores across the Atlantic, and possibly longer, if arrangements are not made to get Dominion Government control over sufficient present tonnage or to arrange for the building of a standard Canadian Government fleet, is the estimate of a British shipping man who is not unconnected with the trans-Atlantic trade. In view of this fact, I learn that a committee is being formed in London to look into the matter. Long after peace is declared the tonnage on the Atlantic will be enormous. According to my informant, not only the allied countries will have to be looked after, with millions of pounds of goods now stacked up for want of transportation facilities, but Germany and her dupes will also require a large amount of tonnage. It is stated that the authorities will start a campaign shortly to encourage the wives and families of Canadian soldiers who are now resident in Britain to return home while steamship facilities are still available."

International Shipbuilding Corporation Ltd. has been incorporated under the Dominion Companies Act, with $2,000,000 capital, and office at Montreal, to build, own and operate steam and other vessels, wharves, dry docks, docks, elevators, tramways, railways, etc. ,and to engage in a general navigation business. The incorporators are H. A. Lovett, K.C., G. W. Cole, N. Sheach, B. F. Bowler and P. F. Brown, Montreal.

Malahat Motorship Co., Ltd., has been incorporated under the British Columbia Companies Act, with $100,000 capital, and office at Victoria, to build, own and operate all kinds of vessels, and to carry on a general vessel owning and navigation business.

Atlantic and Pacific Ocean Marine.

The Cunard Steamship Co. is announced to have received from the builders in England an addition to its fleet, named Aurania, sister vessel to the Andania. It is also reported that the company has placed orders for 4 steamships in the U. S., 2 to be built on the Atlantic coast and 2 on the Pacific coast.

The C.P.R. s.s. Monteagle arrived at Victoria, Mar. 6, from Yokohama, Japan, for the first time after her annual overhaul at Hong Kong, China. Several alterations have been made in the passengers' accommodation, chiefly in the addition of a ladies' lounge and the removal of the smoking room.

The Ulster Steamship Co.'s s.s. Bray Head was sunk by enemy torpedoes, Mar. 14, whilst en route from St. John, N.B., to Belfast. She sailed from St. John, Mar. 1, with a general cargo. At the time of writing (Mar. 22) the captain and the majority of the crew were reported as missing. The Bray Head was built at Belfast, Ireland, in 1894, and was 2,854 tons gross.

The Norwegian Government has decided to remove all so called neutrality markings from Norwegian vessels, as it has been shown that not only do such markings afford no protection from German interference, but actually make them an easy mark for submarine attack, being approached with impunity and attacked at leisure, whilst vessels without such markings are dealt with more warily.

Sir William Mackenzie, President, Canadian Northern Ry., is reported to have stated in Victoria, B.C., recently, in speaking of the projected Pacific Ocean service by the Cunard Steamship Co., which has already been mentioned in previous issues, that the Cunard Steamship Co. has placed orders for steamships to be built at Seattle, Wash., and that he believed they will, when ready, be placed in Pacific Ocean service.

A press report from St. John, N.B., stated recently that it was rumored that that port was to be the main outlet for the C.P.R. Atlantic service during the summer, and that freight from the west would be routed through to St. John for shipment, instead of being shipped from Montreal and Quebec, as heretofore, J. T. Walsh, Marine Superintendent, stated, Mar. 13, that C.P.R. vessels will run, as usual, to Montreal during the summer.

The Cunard Steamship Co.'s s.s. Folia was torpedoed and sunk by the enemy, off the Irish coast, Mar. 11. She was originally known as Principe di Piedmonte, and was built at Sunderland, Eng., in 1907, and was 6,356 gross tons, 4,044 register tons. She was purchased by Canadian Northern Steamships, Ltd., in Dec., 1913, renamed Principello, and leased to the Uranium Steamship Co., in which C.N.S., Ltd., was interested. In May, 1914, Principello Steamships, Ltd., was incorporated to own the vessel, which, from the outbreak of the war to the sale of Canadian Northern Steamships, interests in May, 1916, was operated by Canadian Northern Steamships, Ltd.

A bill is before the Ontario Legislature in the interests of the City of Niagara Falls and Stamford Township, providing for the deepening of the Welland River from where it joins the Welland Ship Canal, to or near Lot 211, Stamford Tp., so that vessels may navigate safely. Amongst the work necessitated would be the construction of a dam and lock at Lot 211, Stamford Tp., instead of at Port Robinson, as originally designed. It is proposed to create a commission, consisting of the mayor of Niagara Falls and the reeve of Stamford Tp., with powers to acquire land and raise money for the purpose desired, the expense to be borne in the proportion of three-fifths by Niagara Falls and the balance by Stamford Tp.

The American Star Line's s.s. Algonquin, which was sunk by a German submarine, Mar. 12, while en route from New York to London, was formerly a Canadian vessel. She was built at Glasgow, Scotland, in 1883, for the Canadian Northwest Steamship Co., Port Arthur, Thos. Marks & Son, managing owners, was purchased some years later by the St. Lawrence & Chicago Steam Navigation Co., and in 1912 was sold to the Port Colborne & St. Lawrence Navigation Co., a subsidiary of the Maple Leaf Milling Co. In 1915 she was purshased by A. B. Mackay, Hamilton, Ont., and subsequently sold to the American Star Line. Her dimensions were: length 245 ft., breadth 40 ft. 1 in., depth 20½ ft.; tonnage, 1,806 gross, 1,172 register.

The s.s. Dundee was torpedoed, Jan. 31, while en route from London, Eng., to Swansea, in ballast. The master, 21 men and the pilot were landed at Penzance on the same day, the second engineer was injured, and one fireman was killed. She was built in 1906 at Dundee, Scotland, for R. O. & A. B. Mackay, Hamilton, Ont., and was owned by the Dundee Steamship Co., Ltd., until she, with other of the Mackay vessels, was taken over by Inland Lines, Ltd., which company was eventually absorbed by the Richelieu & Ontario Navigation Co., now Canada Steamship Lines, Ltd. She was biult on the channel system, with steel tank top where no wood ceilings are fitted, steel boiler house, two non-watertight bulkheads, steam pump wells, and was equipped with complete electric light plant. Her motive power consisted of triple expansion engines with cylinders, 17½, 33 and 54 in. diar., by 36 in. stroke, 1,200 i.h.p. at 67 r.p.m., and supplied with steam by two Scotch boilers, 11 by 15 ft., at 180 lbs. The s.s. Dundee, with a number of other vessels owned by the company, was chartered for ocean service soon after the commencement of the war.

Great Britain Leases Greek Ships.—It is reported that Great Britain is arranging to lease Greece's merchant shipping on the basis of 30 shillings a ton per month, and insure them to the extent of £30 to £40 a ton. They will be leased for the duration of the war and six months later. Greece is to deposit a quarter of the vessels' value in London as a surety for the carrying out of the terms of the lease, and if it is unwilling to do this, the vessels will be commandeered at the rate of 7 shillings a ton. It is stated that there are about 700,000 tons of such shipping available, now being held in British and allied ports.

Quinte Steamships, Ltd., has been incorporated under the Ontario Companies Act, with $40,000 capital, and office at Trenton, Ont., to own and operate steam and other vessels of every description, to carry on a general navigation and transportation business, etc. The provisional directors are: H. Dempsey, Ameliasburgh Tp.; H. R. Cory, J. C. Young, G. Alford and J. E. Rathbun, Trenton, Ont.

Maritime Provinces and Newfoundland.

The Reid Newfoundland Co.'s s.s. Sagona ran ashore in the Main a Dieu passage, Cape Breton, N.S., early in March. She was reported to be in on danger and the passengers and crew were removed in safety.

The C.P.R. will operate the s.s. Empress on its Bay of Fundy service, between St. John, N.B., and Digby, N.S., daily except Sunday, throughout the summer, leaving St. John and Digby at 7.15 a.m. and 2.15 p.m., and arriving at Digby and St. John at 10.15 a.m. and 5.15 p.m.

The Governor in Council has approved the Halifax Pilot Commisisoners' amendment to a bylaw, dated Apr. 8, 1910, providing for the payment of $1,000 instead of $800 a year, to the Secretary Treasurer of the Commisioners. Payment of $1,000 a year has been made illegally from Apr. 8, 1910, as the approval of the Governor in Council had not been previously obtained. The approval now given legalizes the payments illegally made.

The sealing fleet which left St. John's, Nfld., early in March, for the sealing grounds on the east coast of the island, and in the Gulf of St. Lawrence, consisted of 10 wooden and 2 small steel vessels. The large steel steamships usually used in this service are engaged at present by the Russian Admiralty in the White Sea.

The Boston & Yarmouth Steamship Co.'s s.s. Yarmouth is reported to have been sold to New York parties for service between New York and the West Indies. She is to be overhauled and refitted for that service in New York. She was built at Dumbarton, Scotland, in 1887, for the Dominion Atlantic Ry., and is screw driven by engine of 260 n.h.p. Her dimensions are: length 220.3 ft., breadth 35.2 ft., depth 21 ft.; tonnage, 1,452 gross, 725 register. She was operated, in conection with the Dominion Atlantic Ry., from Yarmouth, N.S., to Boston, Mass.

The National Shipbuilding Co., Ltd., has ben incorporated under the Dominion Companies Act, with $100,000 capital stock, and office at Goderich, Ont., to carry on a general shipbuilding, engineering and boiler making business. The incorporators are: W. H. Hutchinson, St. Catharines, Ont; R. G. Stewart, E. A. Larmonth, J. D. Cunningham and L. Cote, Ottawa. W. H. Hutchinson, who is chiefly interested in the company, is a member of Baldry, Yerburgh & Hutchinson, Ltd., contractors for section 2 of the Welland Ship Canal. It is reported that, on behalf of the company, he has purchased the property formerly operated by the Doty Marine & Engine Co., at Goderich, from the town, which took it over from the old company, in default of payments due. It is stated that the amount paid for the property is about $30,000.

A dispatch from Cleveland, Ohio, states that there will be an addition of 16 to the number of U. S. vessels on the Great Lakes equipped with wireless telegraphy. In all, 70 vessels will be so equipped, to keep in touch with 15 land stations of the Marconi Co., and with the U. S. station at Great Lakes, Ill. Another Marconi station is under construction at Alpena, and is expected to be ready for operation about May 1.

Province of Quebec Marine.

The Inland Revenue Department received tenders to Mar. 22, for the privilege of ferrying across the Ottawa River between Rockcliffe, Ont., and Gatineau Point, Que.

The Dominion Government is calling for tenders for a steamship service between Quebec and Harrington, to consist of four regular sailings from Quebec to Natashquan, one each month to Harrington Harbor, and one trip each season to Blanc Sablin.

The lightship no. 12, heretofore maintained at the junction of the St. Lawrence River ship channel, and the Ottawa River steamboat channel, near Dorval, has been withdrawn, as also has lightship no. 13, hitherto stationed about a mile above the Dixie front range lighthouse. On the reopening of navigation, gas buoys will be placed.

It is expected that work will be completed during April by Canadian Vickers, Ltd., on two covered shipbuilding berths. which will double the capacity of the plant at Maisonneuve. The dimensions of these sheds are 500 x 128 ft., and 400 x 100 ft., respectively, and they will enable vessels of approximately 12,0000 tons to be built there.

The Canadian Government Railways car ferry Leonard, operating across the St. Lawrence, was caught in the ice, towards the end of February, and suffered propeller and other damages. One car of gasoline broke loose and fell overboard, broke through the ice and sank. The Leonard was subsequently towed to the Davie dock at Point Levis, by the Dominion Government s.s. Lady Grey, and the Quebec and Levis Ferry Co.'s s.s. Polaris, where the damage was repaired.

Ontario and the Great Lakes.

Forwarders, Ltd., Kingston, will not operate any steamships on the Great Lakes this year, both of its vessels, Port Colborne and W. H. Dwyer, being in other service overseas.

The Imperial Oil Co. has entered action at Toronto, against Canada Steamship Lines Ltd., for $100,000 for negligence whereby the s.s. Midland Prince collided with, and damaged the s.s. Imperial.

The Port Huron and Sarnia Ferry Co.'s s.s. Hiawatha is being overhauled, and practically rebuilt prior to entering summer service. The space for automobiles and other vehicles is being considerably increased.

The Ontario Legislature is being asked to confirm a bylaw by the ff SHR ed to confirm a bylaw passed by the ratepayers of Midland, granting aid to the Midland Dry Dock Co. Ltd., for the maintenance of its plant there.

A press dispatch from St. Catharines states that the Department of Railways and Canals is releasing all engineers and office staffs engaged on the construction of the Welland Ship Canal, by Apr. 1. It has already been decided to discontinue the work for the present.

The Dominion Marine Association has recommended the extension of the northwest breakwater at Goderich, by some 400 or 500 ft. farther out in the same line at its western end, thus maintaining the width of the entrance and giving additional protection to the harbor from westerly seas.

The Northern Navigation Co. announce that the s.s. Rochester, owned by Canada Steamship Lines, Ltd., will be operated Bay ports. The alterations on the steamships Noronic, Hamonic, and Huronic are being pushed forward, and it is expected that the full service will be in operation during the latter half of April. The plan of having a matron on board the company's vessels will be continued.

The U. S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level for February as follows: Superior, 602.42; Michigan and Huron, 580.49; St. Clair, 574.87; Erie, 571.35, and Ontario, 245.08. Compared with the average February levels for the past ten years, Superior was 0.68 ft. above; Michigan and Huron, 0.62 ft. above; Erie, 0.34 ft. below, and Ontario, 0.57 ft. below.

The Canadian Dredging Co., Keen & Millman, and D. Sullivan, Midland, took action recently against the barge Mike Corry, which ran aground near Midland in July, 1916, for services in the salvage operations. The claims are for $800, $195 and $200 respectively. The barge was sold by order of the Admiralty Court, and the proceeds paid into court, but the amount received is not sufficient to meet the claims. Judgment was reserved.

The Welland Board of Trade on Mar. 7 passed a resolution recommending that the Department of Railways and Canals begin at once the necessary surveys for the building of a canal and river system of waterways from the foot of Lake Ontario to Montreal, of a character and capacity to conform to the plans of the Welland Ship Canal, now under construction, so that the work may be undertaken as soon as possible after the termination of the war.

The s.s. G. R. Crowe, which sailed from New York, Mar. 5, for an unnamed destination, ran aground on the east bank of the Ambrose Channel, off Coney Island. She was formerly owned by the St. Lawrence & Chicago Steam Navigation Co., Toronto, and was sold at the end of 1915 to A. B. Mackay, Hamilton, Ont., and was subsequently reported to have been sold to U. S. parties, and it was said that she was to be converted into an oil tank vessel for service to the Gulf of Mexico.

Since Jan. 1, 1916, the Marconi Wireless Telegraph Co. of Canada has equipped the fololwing vessels operating on the Great Lakes, with wireless telegraphy: Charlton and Reginald, Victoria Harbor Lumber Co., Toronto; Glenshee, Great Lakes Transportation Co., Midland, Ont.; Riverton, Mathews Steamship Co., Toronto; James Reid, Reid Wrecking Co., Sarnia, Ont.; Iocolite, Reginolite, Sarnolite, Royalite and Tararalite, Imperial Oil Co., Sarnia, Ont.; Turbinia, Rochester, Rapids King, Canada Steamship Lines, Ltd., Montreal; and the steamships Schoolcraft, G. R. Crowe and Luz Blanca.

The Montreal Transportation Co. has bought the s.s. Omega from the Omega Transportation Co., Detroit, Mich., and has renamed her Glenmount. She was first named Fayette Brown and was built at Wyandotte, Mich in 1887 and lengthened in 1896. She is of composite construction with double bottom, three watertight bulkheads, steel boiler house and two cargo compartments with hatches spaced 24 ft. centres. The propelling machinery consists of triple expansion engines with cylinders 19, 30 and 52 ins. diar., by 40 ins. stroke, 700 i.h.p. at 80 r.p.m., driving a propeller, and supplied with steam by two Scotch boilers 11 by 11 ft. at 150 lbs. Her dimensions are, length 306 ft., breadth 40 ft., depth 21 ft. 5 ins.; tonnage, 2,080 gross, 1,217 register.

Manitoba, Saskatchewan and Alberta.

The Peace River Tramway and Navigation Co. is reported to be planning for the placing of additional steamboats in the Peace River below the Chutes, and also on the Mackenzie River, this year. Last year the company built and placed in operation the s.s. D. A. Thomas. It is controlled by interests associated with Lord Rhondda (D. A. Thomas), who is interested in railway, oil and coal mining companies along the Peace River.

British Columbia and Pacific Coast.

The s.s. Kingsway, owned by the Steamer Kingsway, Ltd., Vancouver, arrived there recently with 20,000 lbs. of halibut from the northern banks.

The C.P.R. s.s. Princess Mary was taken off her run between Vancouver and Victoria, early in March for a general overhaul ,and was replaced by the s.s. Princess Alice.

The C.P.R. is having two car floats built for its service between the main land and Vancouver Island. They will be of wood, 150 ft. long, 46 ft. broad, and 12 ft. deep, with capacity for 9 cars each.

H. R. Babington, of Prince Rupert, is reported to be negotiating for the purchase of the s.s. Queen City, formerly owned by the C.P.R. It is stated that he proposes to operate her between Prince Rupert and Queen Charlotte Islands.

The Grand Trunk Pacific Coast Steamship Co. will continue its service to Alaska. This service which was inaugurated last year was, in every way, successful. The steamships Prince George and Prince Rupert will be engaged on the route.

The C.P.R. is reported to have called for tenders for the building of a large freight barge of about 1,200 tons capacity, for bulk freight towage. It is stated that the plans provide suitable accommodation for engines, shiuld it be decided to install them later on.

The Governor in council has approved the Vancouver Harbor Commissioners' bylaws 116 and 117, providing for the rates to be charged for all goods landed on or shipped over any wharf under the Commissioners' jurisdiction, and for storage, unloading and handling.

The repairs to the C.P.R. s.s. Princess Patricia, necessitated by her stranding on the Spanish Banks, while on her run between Vancouver and Nanaimo, were completed at Victoria at the end of February. Eight plates were removed on the starboard side and replaced, and 20 floor beams required straightening.

The Marine Department has established a gas lighted beacon on the outer edge of the Ogden Point breakwater at the entrance to Victoria harbor. It was expected that the light would be placed in operation about April 1, when the gas and bell buoy previously in operation near that point is to be withdrawn.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince John, which stranded in the Wrangell Narrows in January, was repaired at North Vancouver, and was replaced in service, Mar. 3. An investigation into the cause of the casualty was opened Feb. 28, the judgment being given on another page in this issue.

It was reported in Victoria recently that one of the questions which will be

taken up in England, during the visit of the Prime Minister and the Minister of Public Works, is that of constructing a dry dock at Esquimalt. It is stated that should the British Admiralty consider that such work is a necessity, orders will be given at once to make an immediate start on it.

The maintenance of the lights, buoys, and beacons along the coast is being attended to by the Dominion Government steamships Estevan, Leebro, and Newington, this year. The Newington is replacing the s.s. Quadra, which was wrecked last year. As mentioned in our last issue, the Government has placed $150,000 in the estimates for the current year for the construction of two steamships to take the place of the Quadra, but, such construction is to remain in abeyance for the present.

The second of the auxiliary powered vessels which are under construction at North Vancouver, for the Canada West Coast Navigation Co., was launched Mar. 6, and named Geraldine Wolvin. The previous vessel launched at North Vancouver was named Mabel Brown. Other vessels for the same company are under construction on the Island, the Margaret Haney having been launched there a few weeks ago, and the Laura Whalen on Mar. 19. The fifth vessel to be launched will be the Jessie Norcross at North Vancouver, early in April.

In our last issue mention was made of the Victoria Board of Trade's complaint that vessels built at Victoria for Canada West Coast Navigation Co., were registered at Vancouver. Representations made by the board to the company elicited the statement that it was customary, wherever possible, that all vessels of a fleet be registered at the same port, and the company's financial arrangements had all been made on the basis of a Vancouver registry, where the company's head office is located. It was also stated that the interests managing the company hope to build another two vessels at Victoria, which would not be for Canada West Coast Navigation Co., when Victoria registry would probably be arranged.

The Panama Canal Channel through Culebra Cut is said to be now in better condition than ever before. The cut, which has been dredged through the slides, has a minimum depth of 33 ft. and the least width of a channel of 30 ft. depth is 180 ft. at the point opposite Gibraltar rock. This rock projects into the channel about 110 ft., and extends along the channel about 200 ft. It has been blasted away until it now rises only about 30 ft. above the water. Two dredges are at work on the removal of this rock and are dredging behind it to prevent its being pushed forward. Work of the dredging force of the canal on Sundays and holidays was discontinued on Dec. 3, except for the force engaged in blasting at Gibraltar. Since June 1, 1915, dredging was carried on in the cut continuously with three shifts a day, including Sundays and holidays unttil Dec. 3.

Lakeside Coal & Transportation, Ltd., has been incorporated under the Dominion Companies Act, with $50,000 capital, and office at Montreal, to carry on a general coal and navigation business.

The Marine Navigation Co. of Canada, Ltd., has been incorporated under the Dominion Companies Act, with $50,000 authorized capital, and office at Montreal, to carry on a general steamship and navigation business.

Mainly About Marine People.

Capt. John Bonar, a well known master on the Great Lakes and the Bay of Quinte, died at Cobourg, Mar. 5, aged 83.

F. S. Spence, who was, for some years prior to 1911, member of the Toronto Harbor Commission, died at Toronto, Mar. 7.

James S. Paige, formerly associated with the Fore River Shipbuilding Co., Quincy, Mass., has been appointed General Manager, Port Arthur Shipbuilding Co., Port Arthur, Ont.

Senator H. W. Richardson, Kingston, Ont., Vice President, Great Lakes Transportation Co., has been appointed a member of the Provincial Resources Committee, constituted by the Ontario Legislature's authority.

Lt. Col. W. P. Anderson, C.M.G., Chief Engineer Marine Department, was on a trip of inspection along the British Columbia coast during March and spent some time looking over the various proposals for harbor development at Vancouver.

C. Gregoir, Superintendent of the Port Arthur Shipbuilding Co.'s dry dock, Port Arthur, Ont., was presented with a diamond ring by the employes, Mar. 14, on leaving Port Arthur for Buffalo, N.Y., where he has been appointed Superintendent, Buffalo Dry Dock Co.

Capt. J. N. P. Ritchie, who died at Victoria, B.C., recently, aged 58, was formerly master of the C.P.R. s.s. Princess Patricia. He was born at Yarmouth, N.S., and commenced his sea life in 1875 on Atlantic sailing vessels. He settled in British Columbia in 1893, and was, for some time, master of the s.s. Joan, owned by the Esquimalt & Nanaimo Ry. Subsequently he served with the Canadian Pacific Navigation Co., and remained in the service when that company was taken over by the C.P.R.

Capt. Gilbert Johnston, Consulting Engineer, Canada Steamship Lines, Ltd., Montreal, died there, Mar. 13, aged 64, after a prolonged illness. He was born at Kingston, Ont., the son of Gilbert Johnston, foreman at the Calvin Co.'s shipbuilding yard at Garden Island. He entered the steamboat business at an early age, and was eventually master of the s.s. Hero. In 1894 he was appointed Mechanical Superintendent, Richelieu & Ontario Navigation Co., Montreal, retaining that position on the taking over of the company by Canada Steamship Lines, Ltd., until his practical retirement from active service in Apr., 1916, when he was appointed Consulting Engineer.

W. E. Burke, Assistant Manager, Canada Steamship Lines, Montreal, who has been elected a director of the company, was born at Belleville, Ont., Sept. 23, 1881, and entered steamships service May 1, 1905, since when he has been, to Dec. 1, 1905, purser, s.s. Picton, Richelieu & Ontario Navigation Co., Montreal to Toronto; Dec. 1, 1905, to Dec. 31, 1906, Soliciting Freight Agent, same company, Toronto; Dec. 31, 1906, to Dec. 31, 1907, Travelling Freight Agent, same company, Toronto; Dec. 31, 1907, to Apr. 10, 1909, Travelling Freight Agent, Mutual Steamship Co., Toronto; Apr. 10, 1909, to Apr. 1, 1910, General Freight Agent, Merchants Mutual Line, Toronto; Apr. 1, 1910, to Jan. 1, 1914, Traffic Manager, same company, Toronto; from Jan. 1, 1914, Assistant Manager, Canada Steamship Lines, Ltd., Montreal. He was President, Dominion Marine Association, for 1916.

Denis Murphy, President, Ottawa Transportation Co., died at Ottawa, Mar. 12 after an illness of several months, owing to a growth on the spleen. He was born at Cork, Ireland, Apr. 2, 1842, came to Canada in 1849, and was educated at Chatham, Que. He entered transportation service in 1856 as purser on McPherson & Crane's steamboat plying between Montreal and Kingston and was subsequently master of a steamship on the same route. In 1865 he was engaged by the Montreal & Ottawa Forwarding Co. as master of one of its steamships, and in the following year was appointed Ottawa manager of that company's business. In 1880 he entered the towing and transportation business in partnership with J. W. McRae and A. A. Buel, and traded as D. Murphy & Co. On account of the growth of the business, the Ottawa Transportation Co. was incorporated in 1892, with D. Murphy as President, which position he held to the time of his death. From 1902 to 1906, he was one of the members for Ottawa in the Ontario Legislature, and was a member of the Timiskaming & Northern Ontario Railway Commission from 1905. He was one of the largest shareholders in the Ottawa Electric Ry., and was identified with that company almost from its inception. Amongst other transportation concerns with which he was connected were: Shawinigan Water & Power Co., Montreal Terminal Ry., Chateauguay & Northern Ry., Canadian Railway Accident Insurance Co., etc. Brevet Colonel G. P. Murphy, C.M.G., his only son, formerly Managing Director of the Ottawa Transportation Co., is at home on leave from his military duties.

Shipbuilding Encouragement in Nova Scotia. — The Lieutenant Governor's speech from the throne, at the opening of the Nova Scotia Legislature recently, contained the following paragraph:

"It is most gratifying to observe, in almost every portion of the province, renewed activity in shipbuilding. The adaptability of the people of Nova Scotia to assist in providing ocean transportation is well recognized, and it is confidently hoped that our province will again become a ship building centre. It would be a matter for satisfaction if the present demand for tonnage resulted in the establishment of a permanent steel ship building industry in this province. The question of offering further aid to this end is engaging the government's serious attention."

Government Vessel for Pacific Coast Trade. — Ottawa press dispatch, Mar. 22.—For some time negotiations have been conducted by the Railways Department for the purpose of establishing steamship communication between Atlantic and Pacific ports. A contract has been made with the Wallace Shipyards, Ltd., of North Vancouver, for a vessel, 225 ft. long, with a freight capacity of 2,500 tons, to cost about $200,000, and to be delivered within the next 10 months. Negotiations are in progress to have a similar vessel built in Victoria.

Requisitioning of Canadian Vessels.— In response to a question in the British House of Commons, Mar. 7, the information was given that the requisitioning of British vessels registered in the Dominions was under discussion with the Dominions' representatives then in England. In the meantime an arrangement had been made with the Canadian Government, under which no Canadian vessels were requisitioned except through or by the Canadian Government.

British Columbia Shipbuilding Commissioners Report.

The Commissioners appointed by the B.C. Government to administer the B.C. Shipping Act, have presented their first report over the signatures of H. P. Thompson, Superintendent, and W. J. Goepel, Deputy Finance Minister, as follows: Under section 53 of the act we have received application for the following ships: 1 Mabel Brown, 2 Geraldine Wolvin, 3 Jessie Norcross, 4 Marie Barnard, 5 Mabel Stewart, 6 Janey Carruthers, 7 Margaret Haney, 8 Laurel Whalen. All of these boats are being built for the Canada West Coast Navigation Co., Ltd., and are of the same standard size and specifications, which are as follows: Five-masted auxiliary schooners, length over all, 260 ft.; beam, 44 ft.; depth of hold, 19 ft. They will be equipped with auxiliary power, using oil-fuel, Bolinder type of engines which will develop 320 h.p. Under normal conditions the ships will make a speed of 7 knots under engine power and will each require a crew of about 15. The cargo-carrying capacity is estimated approximately at 1,500,000 ft. of lumber. The approximate cost of each of these vessels when completely equipped will be about $200,000. They are informally advised that applications will be made for four additional ships of the same size and specifications, the engines, material and equipment having been purchased for their construction.

They are being constructed according to plans passed and under special survey of Lloyd's, with a view to obtaining the highest class in the register. They are being built under the supervision of Lloyd's surveyor, and when completed will be classed A1 for 12 years.

Ocean Steamships for Dominion Government.—With reference to the announcement made by the Minister of Customs recently, and which was dealt with in Canadian Railway and Marine World for January, as to the building of two steamships for the Dominion Government for service between the Pacific and Atlantic coasts, via the Panama Canal, we are officially advised that it has been decided to build two wooden vessels, and that contracts have been prepared and sent to those who are offering to build them, for consideration and signature. As soon as they are returned signed, the Minister will also sign and the matter will be completed. There is no truth in the reports that the Government is considering the purchase of a fleet of steamships, nor that it has made any purchase of vessels.

The George Hall Coal & Transportation Co. has been incorporated at Ogdensburg, N.Y., with authorized capital of $1,500,000, to take over the steamships, and terminals at Ogdensburg, Prescott, Ont., and Montreal, heretofore operated by the George Hall Coal Co., and the George Hall Coal Co. of Canada Ltd., and to transport soft coal between Lake Ontario and St. Lawrence River ports.

First Steamship at Toronto. — The Kingston, Ont., Gazette of June 17, 1817, stated that the Frontenac, a steamboat launched at Ernesttown in Sept., 1816, had left on her first trip to the head of Lake Ontario on June 5, and would commence a regular service between Kingston and Queenston, calling at York (Toronto), on June 22, 1817.

Telegraph, Telephone and Cable Matters.

G. D. Perry, General Manager, Great Northwestern Telegraph Co., returned to Toronto, Mar. 25, after spending three weeks in Florida.

H. Hulatt, Manager of Telegraphs, G. T. R. and G. T. P. R., addressed the Montreal Electrical Association, Mar. 7, on the position of the inefficient after the war.

John D. Gaines, Superintendent, Commercial Cable Co.'s station at Shanghai, China, and Mrs. Gaines, who have been visiting in Nova Scotia, have returned to China.

C. A. Tinker, who died at Winnipeg, Mar. 13, was for 27 years Eastern Manager, Western Union Telegraph Co., New York, and retired from active service about 15 years ago. He acted as confidential cipher telegrapher to President Lincoln of the U.S. during the civil war.

Dr. A. G. Bell, who invented the telephone at Brantford, Ont., has been awarded the Civic Forum gold medal at New York recently for distinguished public service. He is the third recipient of this medal, the others being General G. W. Goethals and T. A. Edison.

The Great North Western Telegraph Co. has opened offices at Cap Rosier and Port Alfred, Que.; and Arran, Englefield and Wartime, Sask., and has closed its offices at Banning, Bears Pass, Chaffey's Locks, Lake Joseph and Sparrow Lake, Ont., and Grand Beach and Victoria Beach, Man.

John Wilkinson, heretofore Assistant Superintendent, Commercial Cable Co.'s station at Waterville, Ireland, has been appointed Superintendent of the office at London, Eng., vice E. G. Phillips, deceased. He entered the company's service in Oct., 1884, and served as an operator at Liverpool, Eng., until Feb., 1891, when he was appointed Assistant Superintendent there, being transferred to Waterville, Ireland, in Aug., 1911.

Among the Express Companies.

A board of conciliation appointed under the Industrial Disputes Investigations Act to consider the Canadian Northern Ex. Co.'s employes' demands for increases in wages, etc., is reported to have effected a settlement, whereby certain increases are granted.

The Canadian Northern Ex. Co. has opened offices at Bears Pass and Ruel, Ont.; Arran, Engelfield and Wartime, Sask.; Lanfine, Alta, and Chu Chua, B.C.; and has closed its offices at Perthuis, Que.; Orillia, Mornington, Uptergrove and Allans station, Ont.; Dropmore and Vista, Man.

The Central Canada Ex. Co., which operates over the Alberta & Great Waterways Ry., the Canada Central Ry. and the Edmonton, Dunvegan & British Columbia Ry., has become a member of the Express Traffic Association of Canada, and arrangements are being made whereby all other express companies may waybill shipments through to that company's offices under the terms of the Express Classification for Canada.

The Board of Railway Commissioners has extended to express companies subject to its jurisdiction the arrangement whereby certain tariffs of freight or passenger tolls may be filed with the board by agents, other than officials of companies acting jointly for two or more railway companies, provided such joint agents be duly authoried to act for the several companies by power of attorney, as set forth in general order 14, July 30, 1908 (order 5117).

D. I. Roberts, President, United States Ex. Co., in liquidation, has entered suit against the Baltimore & Ohio Rd. for $950,361, for damages for breach of contract, under which, from 1887 to 1914, the U. S. Ex. Co. did business over the B. & O.R. It is claimed that from the commencement of 1912, the B. &. O.R. did not accord the U. S. Ex. Co. the exclusive privilege as called for by the contract. D. I. Roberts was formerly General Manager at Montreal of the Quebec, Montreal & Southern Ry. and the Napierville Jct. Ry., subsidiaries of the Delaware & Hudson Co.

At the Express Traffic Association of Canada's last meeting in Montreal, the retiring chairman, W. H. Burr, Traffic Manager, Dominion Ex. Co., was given a silver loving cup by the members, in appreciation of the services he had rendered the association since its inception some nine years ago. The new chairman, J. Pullen, President, Canadian Ex. Co., in making the presentation, paid a high tribute to Mr. Burr, pointing out that the success of the association had been due in no small measure to the latter's personal efforts in furthering its interests. Mr. Burr, in reply, stated that his position had always been a most congenial one, and attributed the association's success to the co-operation of the members, rather than to his own exertions.

Gilbert E. Bellerose, whose appointment as Traffic Supervisor, Canadian Ex. Co., Winnipeg, was announced in our last issue, was born at Penetanguishene, Ont., July 15, 1884, and entered transportation service in Apr., 1902, since when he has been, to June, 1903, in Car Service Department, G.T.R., Toronto; June, 1903, to Oct., 1909, clerk and messenger, road service, Dominion Ex. Co., at various points; Oct., 1909, to Nov., 1911, similar positions, Great Northern Ex. Co., Vancouver, B.C., and Spokane, Wash.; Dec., 1911, to June, 1915, messenger, road service, and depot agent, Dominion Ex. Co., Nelson, B.C., and Calgary, Alta.; Feb., 1915, to Feb., 1917, messenger, road service, Canadian Northern Ex. Co., Winnipeg.

Trail Delivery Limits.—The Board of Railway Commissioners passed order 25954, Mar. 22, as follows: Re the establishment of delivery limits by the Dominion Express Co. in the City of Trail, B.C. Whereas order 13357, Mar. 30, 1911, as amended by order 16331, April 18, 1912, prescribes the municipal boundaries as the cartage limits of all points where express companies subject to the legislative authority of the Parliament of Canada now or hereafter have cartage services, with leave reserved to the companies to apply to the board for the establishment of modified cartage zones in cities, towns, or villages (if any) where for any special reasons it might be unreasonable to require such services to be made throughout the entire area thereof. Upon the consent of the said City of Trail, filed—it is ordered that, until further order, the tolls of the Dominion Express Co. include the delivery of express freight on both sides of the following thoroughfares, in the city, viz.: Bay Ave.

from Victoria St. to Lot 7, Block 14, between Helena and Portland Sts.; Cedar Ave. from Victoria St. to Helena St.; Pine Ave. from Victoria St. to Helena St.; Helena St. from Bay Ave. to Pine Ave.; Victoria St. from Bay Ave. to Cedar Ave., and from Pine Ave. to Green Ave.; Green Ave. and Rossland Ave. to a point opposite Lot 131, where the C.P.R. necting portion of Nelson St.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Independent Pneumatic Tool Co., Chicago, has issued its catalogue 10, describing Thor pneumatic tools and electric drills. It contains 94 pgs. of illustrated matter.

Mussens, Limited, railway, mining and contractors' supplies, Montreal, have removed their offices from 318 St. James St. to the second floor of the McGill Building, 211 McGill St.

Preston Car & Coach Co., Ltd.—The town of Preston, Ont., has passed a by-law to endorse the company's bonds for $75,000, to enable it to rebuild the portion of its plant which was destroyed by fire recently.

Galena-Signal Oil Co.—S. A. Megeath has resigned as President and General Manager and now has charge of the company's refining and foreign business, with headquarters at 17 Battery Place, New York, N.Y. General Charles Miller has been elected President of the company, with headquarters at Franklin, Pa.

The Ohio Brass Co., Mansfield, Ohio, has issued "Steam Railroad Electrifications," a 34 pg. booklet, 8 x 10½ in., illustrating and briefly referring to 17 electrifications of steam railways, including Montreal & Southern Counties Ry., St. Clair Tunnel, G.T.R., London & Port Stanley Ry., on which some of the company's products were used.

The Du Pont Fabrikoid Co., Wilmington, Delaware, has purchased the Marokene Co. of Elizabeth, N.J., which manufactures a material similar to fabrikoid, which is used extensively by automobile, carriage and upholstery industries. All the sales transactions of the Marokene Co. will be under the direction of the Wilmington office, and the attention of J. K. Rodgers, Sales Manager, Du Pont Fabrikoid Co.

The Standard Underground Cable Co. of Canada, Ltd., has developed a new type of joint box, or housing, for use on submarine cables which has already been used on submarine cables supplied the Halifax Electric Tramway Co., the Ottawa waterworks, the Atlantic City Electric Co., on the U.S. ship canal at Atlantic City, N.J., the Wilmington & Philadelphia Traction Co., and the Pennsgrove Light, Heat & Power Co. in crossing the Delaware River at Wilmington, Del. The box is designed so that all mechanical stresses resulting from the action of tides, currents., etc., which usually tend to damage the cable at these points are taken off the joint proper by long "take-up" rods, on the joint box, parallel to the joint, and to which armor the rods are rigidly connected by heavy iron clamps.

Canadian Westinghouse Co., Ltd.—H. H. Westinghouse, President, having been elected Chairman of the Board, Paul J. Myler, heretofore Vice President, has beel elected President. He was born at Pittsburg, Pa., April 24, 1869, and commenced work as a bookkeeper with a produce commission house, since when his record has been as follows: 1886, billing clerk, Westinghouse Air Brake Co.; 1894-1896, Assistant Auditor, Westinghouse Air Brake Co.; 1896, Secretary, Westinghouse Manufacturing Co. of Canada, with office at Hamilton, Ont.; 1898, General Manager, Westinghouse Manufacturing Co.; 1903, Vice President, Canadian Westinghouse Co., Ltd., in charge of Westinghouse interests in Canada. He is a director of the Bank of Toronto, Landed Banking & Loan Co., British Munitions Co., Ltd., Dominion Steel Foundry Co., Ltd., Travelers Life Insurance Co., North American Pulp & Paper Companies, Hamilton Steel Wheel Co., Ltd.,

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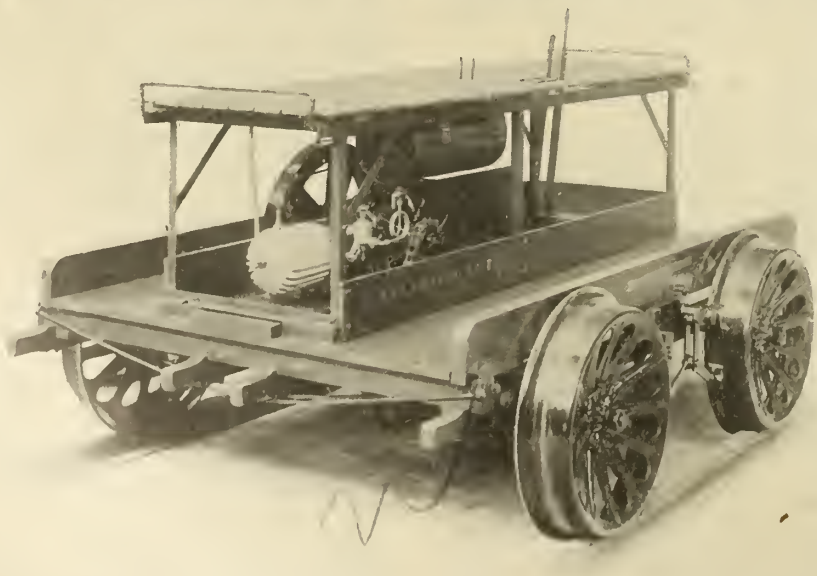

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and Hamilton Hotel Co. He is a member of a number of clubs and technical societies and is honorary Lt. Col., 128th City of Hamilton Battalion, C.E.F.

The Standard Underground Cable Co. of Canada, Ltd., is making an addition to its factory at Hamilton, Ont., which, when completed and equipped with the necessary machinery, will represent an investment of $50,000. The new structure will consist of one story with basement, built of brick and concrete, and will be 125 x 120 ft., which will give a total increase in floor space of 30,000 sq. ft. It is to be most modern in type and equipped to secure the lighting, heating and ventilation necessary to the best working conditions. Ample fire protection apparatus will be provided, including a complete automatic sprinkler system. The new building will be devoted exclusively to wire drawing, and in addition to housing the former equipment, will contain material additions of new machinery capable of drawing wires ranging in size from no. 40, B. & S. G., to the largest size of trolley wire; also machines for grooving trolley wire and for rolling flats and squares such as are used in the manufacture of magnet wire. There will also be two new bright annealing furnaces, for annealing or softening the wire after it is drawn. The addition will not only give room for a considerable increase in the output of the wire drawing department, but the space released will allow for expansions in the stranding and cabling departments. All of the machinery in the new plant will be electrically operated by 3 phase alternating current motors of 550 volts, 25 cycles, the current to be furnished by the city's hydro electric department and carried from the overhead transmission lines to the transformers on the company's property by underground cables. Power is now taken for other uses in the plant from the Dominion Power & Transmission Co.

Transportation Conventions in 1917.

May.—Association of Railway Claim Agents, Louisville, Ky.
May 1-4.—Air Brake Association, Memphis, Tenn.
May 9-11.—Railway Development Association, Louisville, Ky.
May 14-17.—International Railway Fuel Association, Chicago, Ill.
May 15-16.—International Association of Ticket Agents, Banff, Alta.
May 16.—American Railway Association, New York.
May 22-25.—Master Boiler Makers' Association, Richmond, Va.
May 30.—Association of American Railway Accounting Officers, Richmond, Va.
June.—American Association of Freight Agents, Denver, Col.
June 13-16.—American Railway Master Mechanics' Association, Atlantic City, N.J.
June 18-21.—Master Car Biulders' Association, Atlantic City, N.J.
June 19.—Freight Claims Association, Banff, Alta.
August.—International Railroad Master Blacksmith's Association, Chicago, Ill.
Aug. 8-10.—American Association of Railroad Superintendents, Minneapolis, Minn.
September.—Railway Signal Association, Atlantic City, N.J.
Sept. 11.—Master Car and Locomotive Painters Association of the United States and Canada, Chicago, Ill.
Oct. 16-20.—National Association of Railway Commissioners, Washington, D.C.
Sept. 18-20.—Association of Railway Telegraph Superintendents, Washington, D.C.
Sept. 18-21.—Roadmasters and Maintenance of Way Association, Chicago, Ill.
October.—American Association of Dining Car Superintendents, San Francisco, Cal.
October.—Railway Real Estate Association, Duluth, Minn.
Oct. 16-18.—American Railway Bridge and Building Association, St. Paul, Minn.

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Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

Niagara Frontier Summer Rate Committee — James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Granville Street, Vancouver, B.C.

Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.

Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

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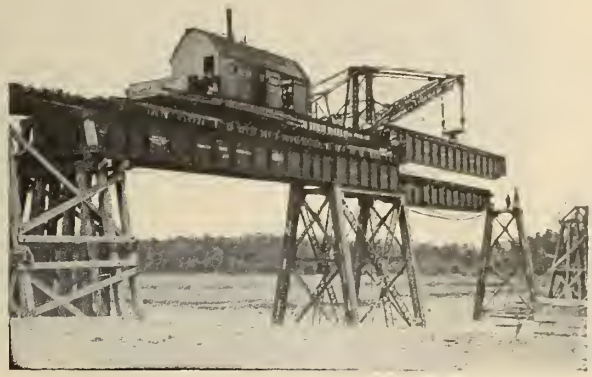

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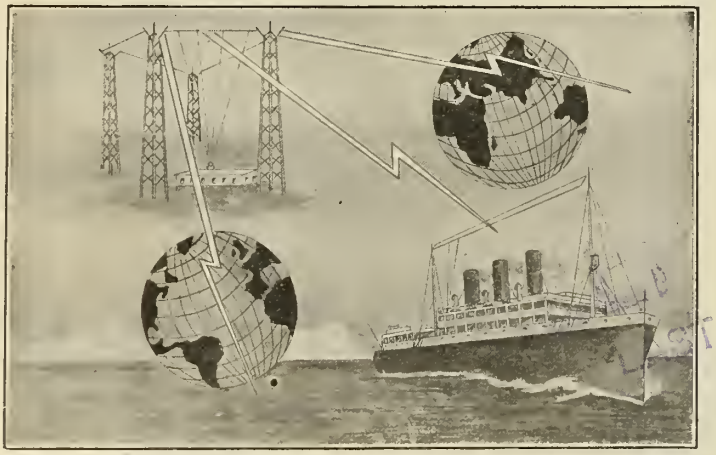

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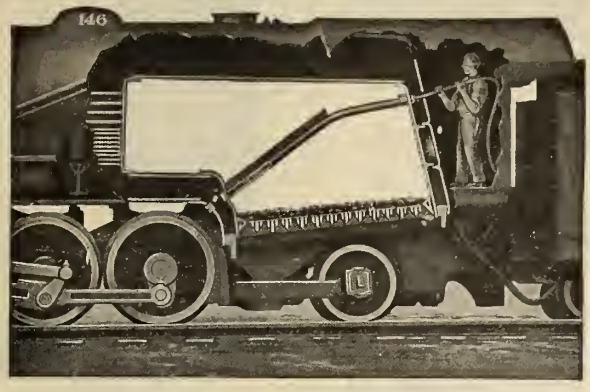

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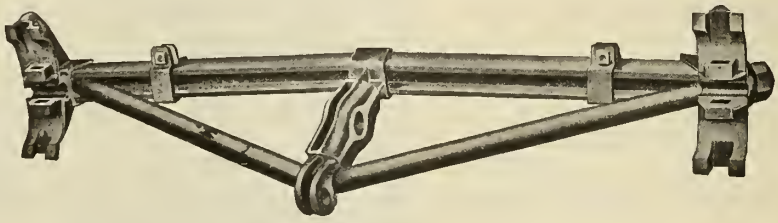

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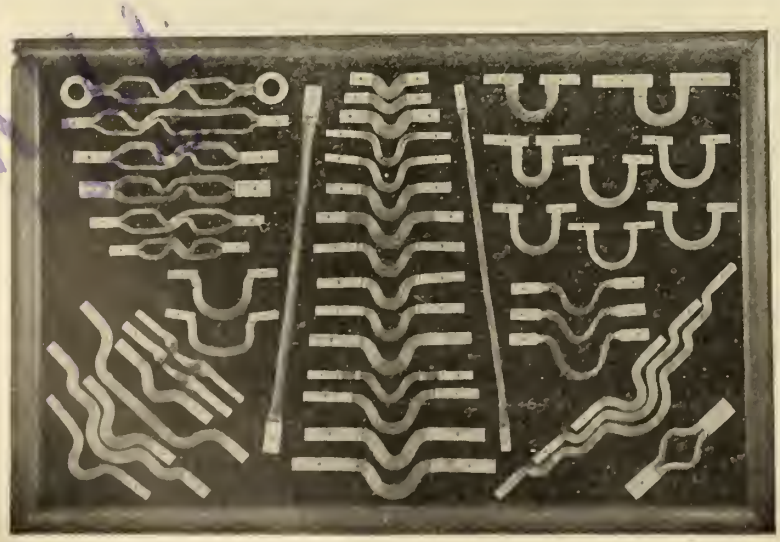

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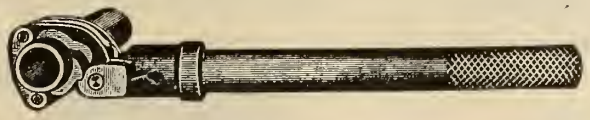

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Length Handle	Set No.	Pipe Handled	Set Complete	Extra Handle	Extra Girths	
10 in.	1	⅜, ½, ¾, 1 in.	$5.00	$2.25	⅜, ½, ¾, 1 in.	$ .75
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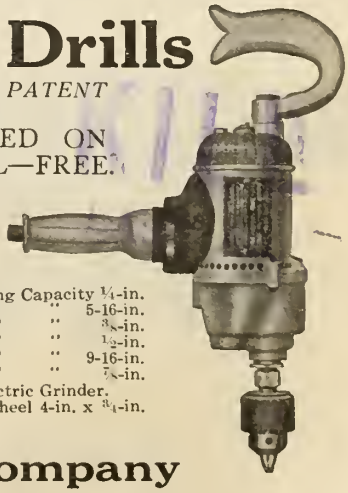

000	Drilling Capacity		¼-in.
00	"	"	5-16-in.
0	"	"	⅜-in.
01	"	"	½-in.
1	"	"	9-16-in.
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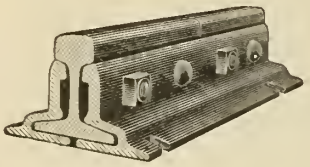
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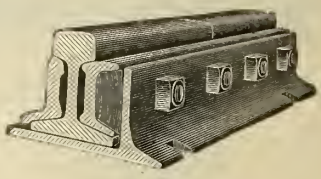
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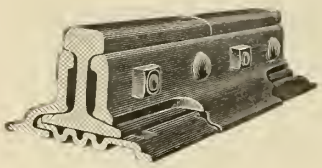
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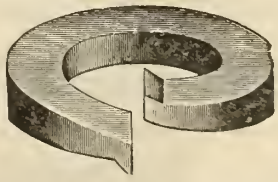

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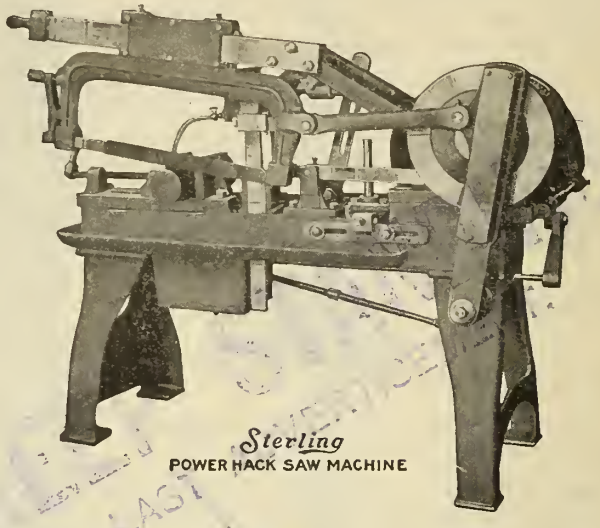

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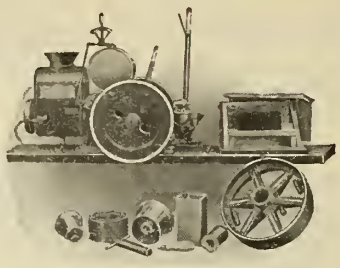

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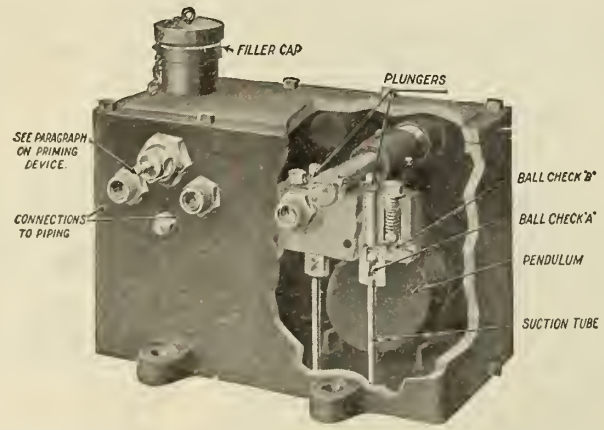

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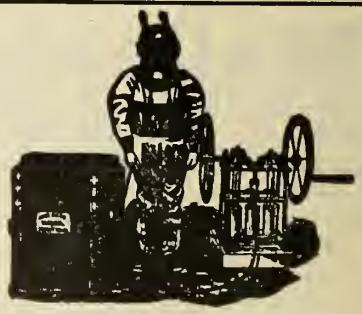

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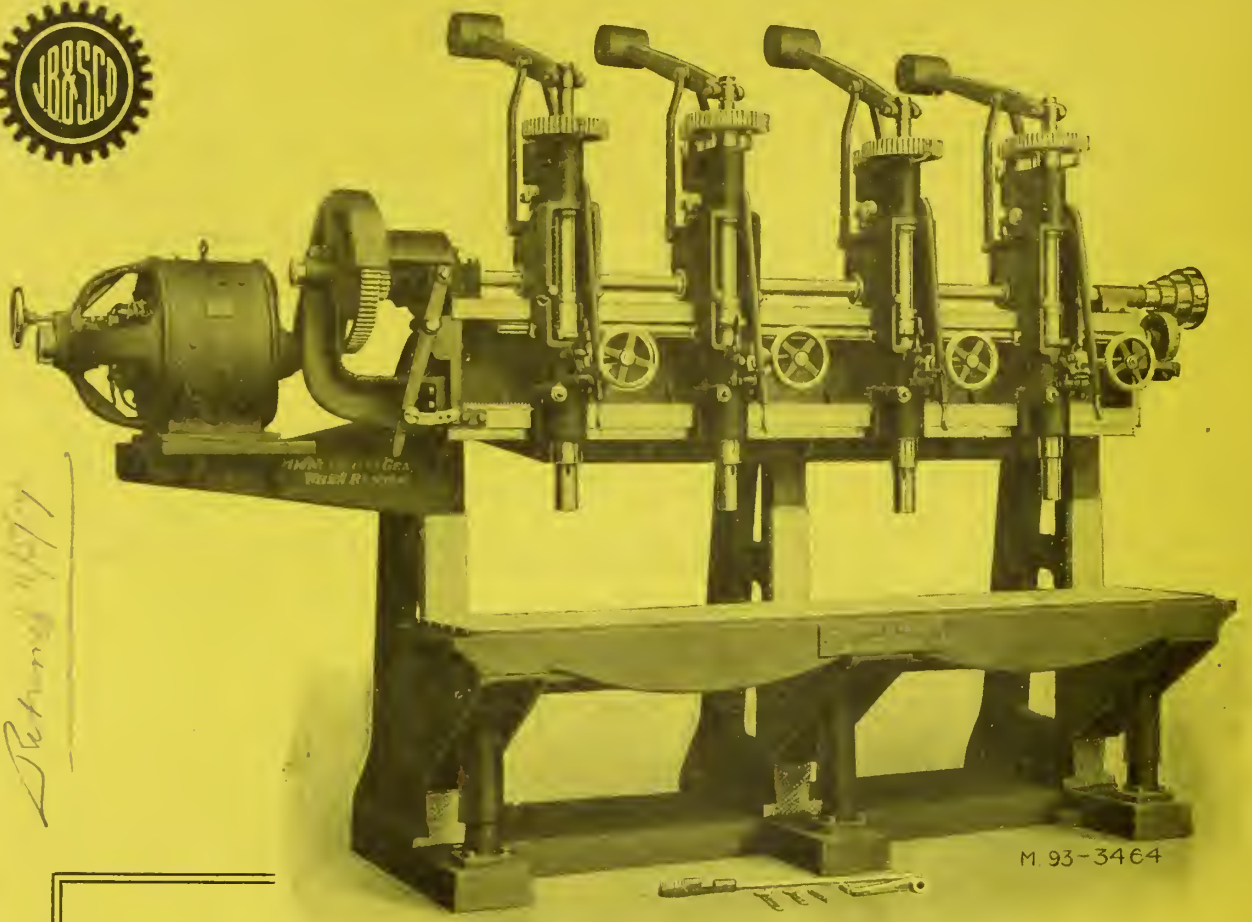

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Simultaneous or independent feeds with independent knock-off for each head and clutch drive for each spindle.

Capacity, four 2-inch holes in steel.

Drop us a line for photographs and full particulars.

The John Bertram & Sons Company, Limited

DUNDAS, ONTARIO, CANADA

MONTREAL 723 Drummond Bldg. | TORONTO 1002 C. P. R. Bldg. | VANCOUVER 609 Bank of Ottawa Bldg. | WINNIPEG 1205 McArthur Bldg.

Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 231 | TORONTO, CANADA, MAY, 1917 | Subscription Rates, Page 189

BERTRAM MACHINE TOOLS

IN this machine, as in all Bertram Machine Tools, especial care has been taken to guard every possible point of danger. This is only one instance where our constant attention to detail in the design and construction of our product has resulted in a machine of safety, simplicity and service.

The John Bertram & Sons Co., Limited

Dundas, Ontario, Canada

MONTREAL, 723 Drummond Bldg.; TORONTO, 1002 C.P.R. Bldg.; VANCOUVER, 609 Bank of Ottawa Bldg.; WINNIPEG, 1205 McArthur Bldg.

24-inch Crank Slotter

Index to Advertisers, Page 84 | Purchasing Agents' Guide, Page 81

Westinghouse

Belt-Driven Air Compressors

Compact, Efficient, Reliable

Can be driven from a line shaft or a gasoline engine. Similar in every respect to our standard motor-driven compressors, except that a belt-wheel takes the place of a motor, and instead of a bed-plate a substantial base is provided. They may be controlled by an automatic governor.

Built in four standard capacities of 15, 26, 44 and 541/2 cubic feet per minute.

Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO, Traders Bank Bldg. MONTREAL, 52 Victoria Sq. OTTAWA, Ahearn & Soper, Ltd. HALIFAX, 105 Hollis St. FT. WILLIAM, Telfer Bldg.
WINNIPEG, 158 Portage Ave. E. CALGARY, Grain Exchange Bldg. VANCOUVER, Bank of Ottawa Bldg. EDMONTON, 211 McLeod Bldg.

THE ART OF STAYING—The locomotive fire box will advance in just that proportion as suitable and adequate means are provided to enable the fire box to expand under the least restriction.

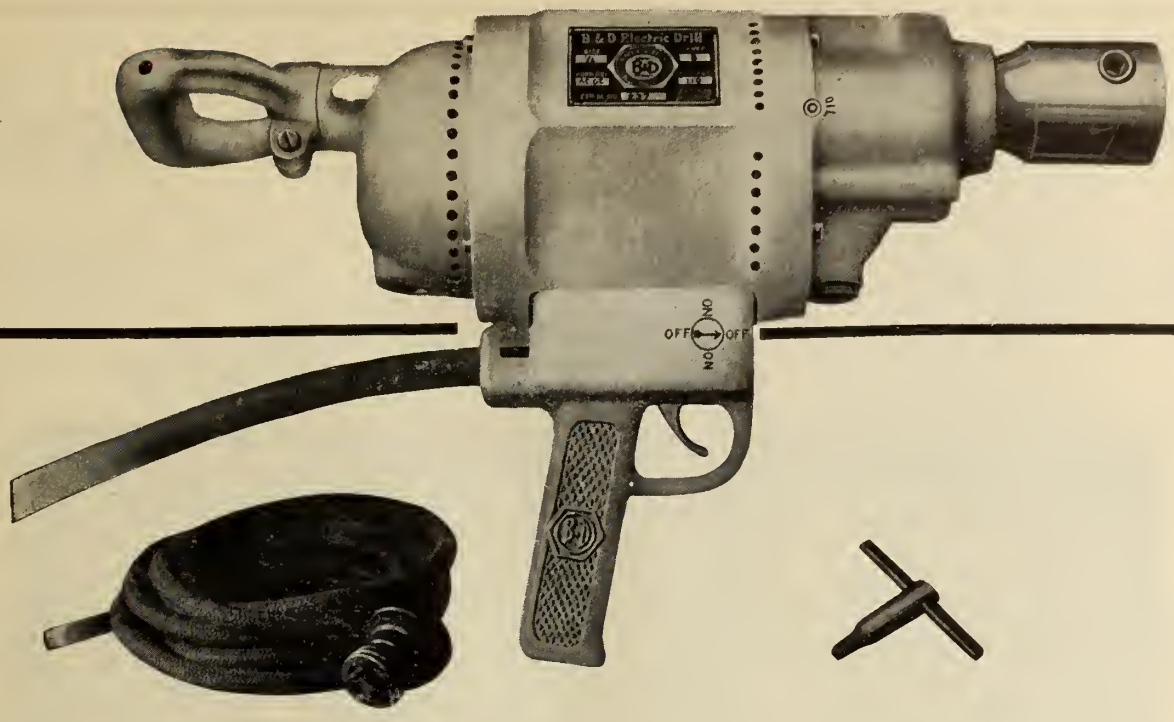
STAYBOLTS BREAK—when the stress of fire box expansion is too severe, and fire sheets distort and crack when staybolts are too rigidly connected to same.

THE TATE FLEXIBLE STAYBOLT—is designed and made to give satisfactory results in the final measure of its usefulness, as an economic, safe and reliable factor in reducing the costs of fire box repairs and maintenance.

ANY ARTICLE THAT CONTRIBUTES—to the service value of the locomotive as an earning factor is well worth considering carefully. From the knowledge of what has been accomplished by the use of the Tate Flexible Staybolt, we feel confident that all our patrons are well aware of its true value.

FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.



The Best "Portable" Is the Most Convenient "Portable"

Holding a Portable Drill steadily, hour after hour, is a wrist straining, drill breaking job; to make it worse, with some drills you have to let go with one hand to reach the switch—and snap go the little drills when the weight falls on them. There's none of that with the compact, light

B & D Portable

The Drill with the Pistol Grip and the Trigger Switch

You can keep both hands on the machine, hold it steady all the time, right up to the time it stops. When it breaks through, you simply pull the trigger and that cuts off the current. The Pistol Grip makes this tool as easy to hold and aim as an automatic pistol, and the Trigger Control adds to its convenience. Light yet strong, with a powerful, cool-running, universal motor, hardened chrome vanadium steel gears and ball thrust bearings, it is an ideal "odd-job" or manufacturing "portable."

All B & D Portable Electric Tools are guaranteed to develop rated capacity and to be free from imperfections in workmanship or material. Any tool proving defective within one year from date of shipment will be repaired at the factory free of charge to the purchaser, provided the tool has been used within its rated capacity and properly applied.

You need "Portables" in your shop; you need them for their convenience, for the time and effort they save. So, why not get the most convenient "Portable"—the B & D Drill, the Drill with the Pistol Grip? Write our nearest House for further particulars.

Northern Electric Company

LIMITED

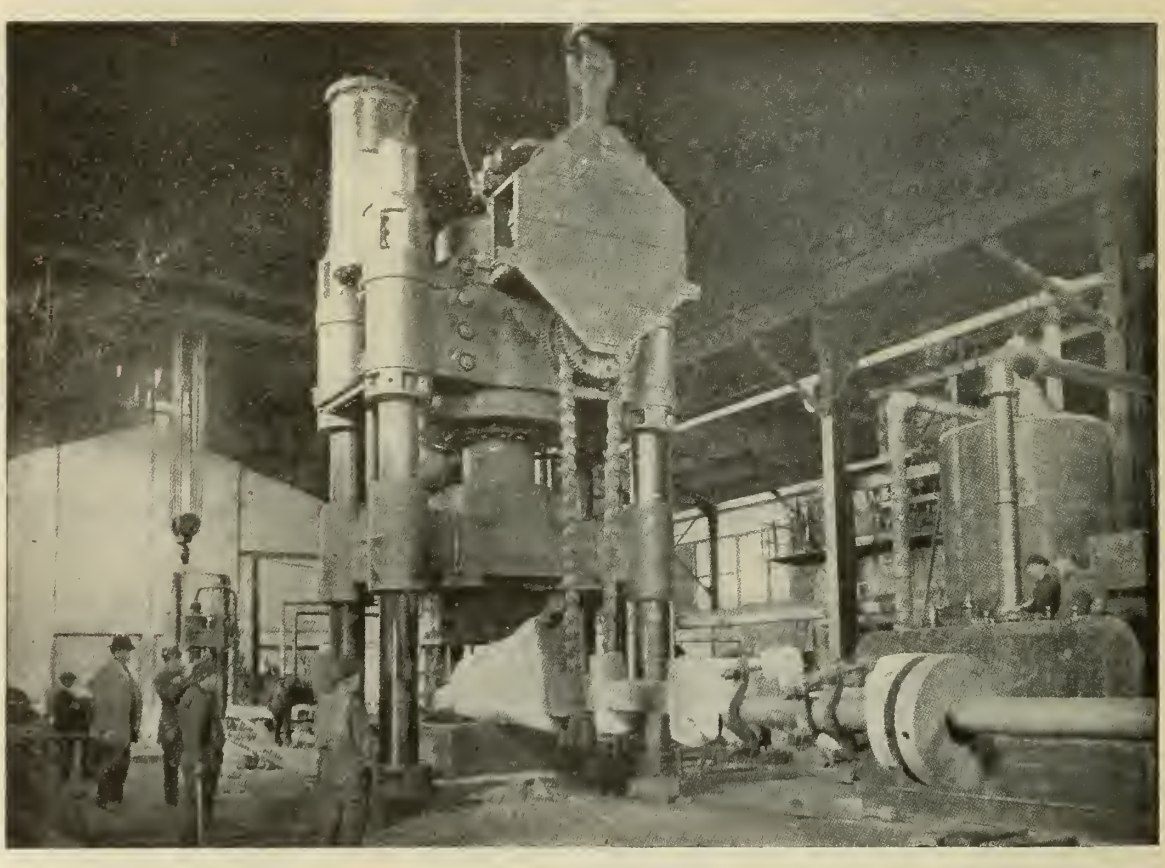
Montreal - Halifax - Ottawa - Toronto - London - Winnipeg - Regina - Calgary - Vancouver

Nova Scotia Steel & Coal Company

LIMITED

Manufacturers of Steel for Shrapnel Shells and Admiralty Forgings | Only Company in Canada producing Steel Ingots by the "Harmet" liquid process

Can supply Forgings up to 40 Tons in weight to all Admiralty and Lloyd's Tests and Specifications



FORGING A RUDDER FRAME

Why "Harmet" Liquid Process Steel Ingots are Superior to Ordinary Steel Ingots:—

1. Prevention of cracks due to shrinkage; of internal stresses and resulting cracks and fissures.
2. Early cessation in the crystallization of the metal, and the production of fine crystallization without cleavage planes.
3. Lessening of segregation, i.e., reduction of tendency of carbon and other impurities to concentrate in the central and upper parts of the ingot.
4. Prevention of "pipes" or interior cavities, and thus preservation of absolute solidity in the ingot.
5. Improvement in physical properties.
6. Reduction in waste of ingot.

OUR modern Steam Hydraulic Forge Shop at New Glasgow, N.S., part of which is shown above, and our large Steel Plant at Sydney Mines, N.S., equal the very best in America.

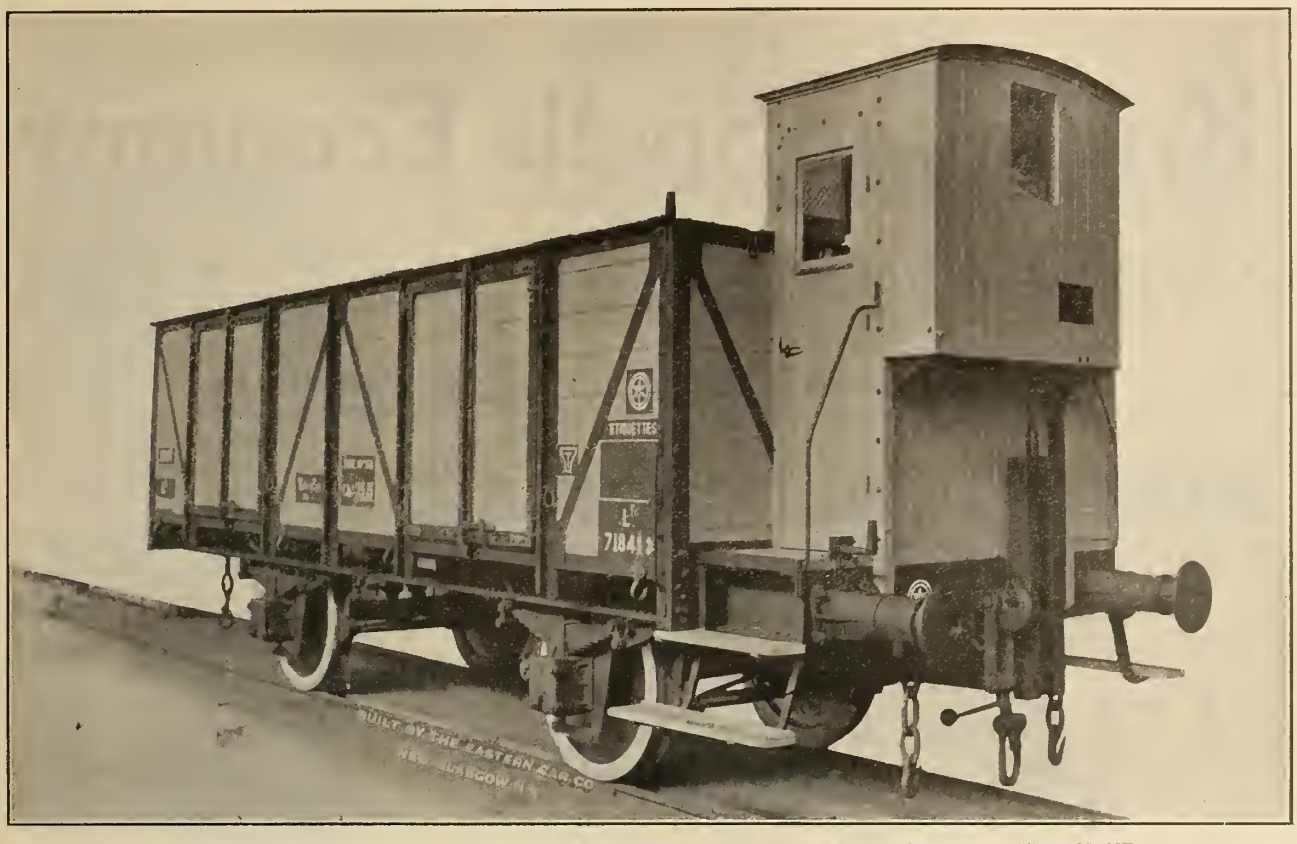
On the shortest notice, we can supply forgings of all shapes and sizes, made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods. It has always been the policy of "Scotia" to hold a position in the front rank of trade, and by the recent additions to plant, this policy has been maintained in a practical manner, bringing "Scotia's" equipment abreast of the best foreign forges.

For prices and full particulars, write to

Head Office, NEW GLASGOW, N.S.

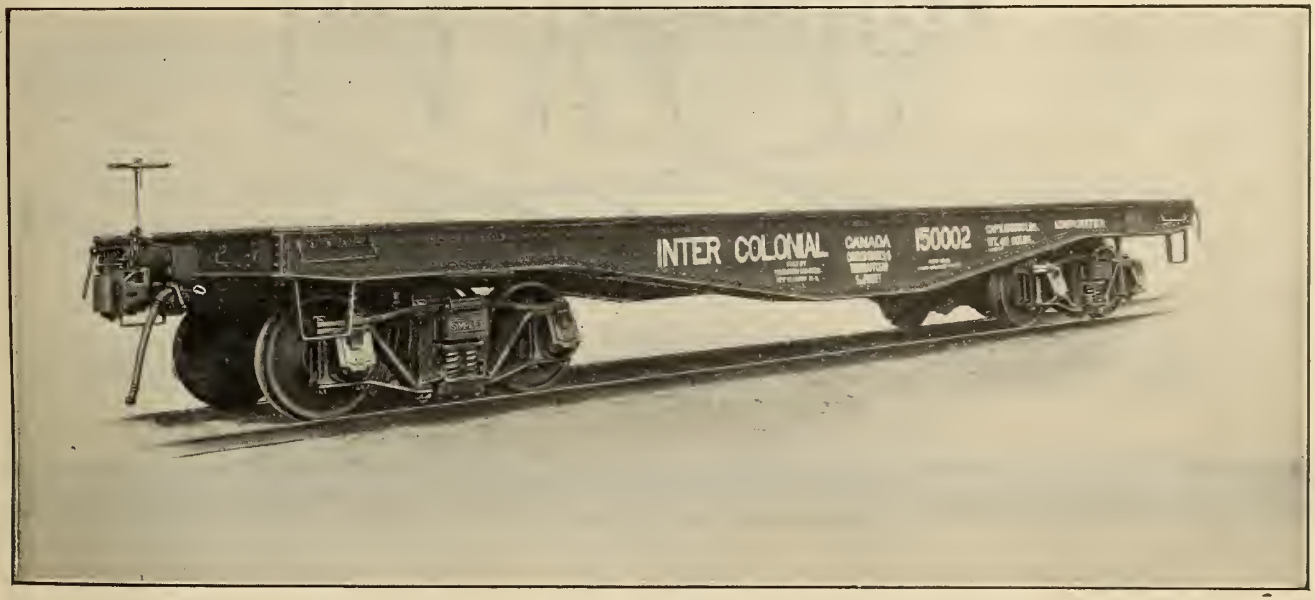
Western Sales Office, Room 14, Windsor Hotel, Montreal



ONE OF 2,000 GONDOLA CARS NOW UNDER CONSTRUCTION FOR THE FRENCH GOVERNMENT.

FREIGHT CARS TO FOREIGN ORDER

We have unexcelled water and rail shipping facilities for the export of freight cars of all types abroad or to United States markets. Our manufacturing capacity reaches to 40 cars per day. Although fully employed in filling and conducting negotiations for further foreign orders, our exceptional output facilities enable us both to take care of these and others in the order in which they are received.



75 TON SPECIAL PIT CAR FOR CANADIAN GOVERNMENT RAILWAYS.

FLAT CARS, CABOOSES, AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

Eastern Car Company, Limited

General Offices and Works, New Glasgow, N.S. **Montreal Office, Room 14 Windsor Hotel**

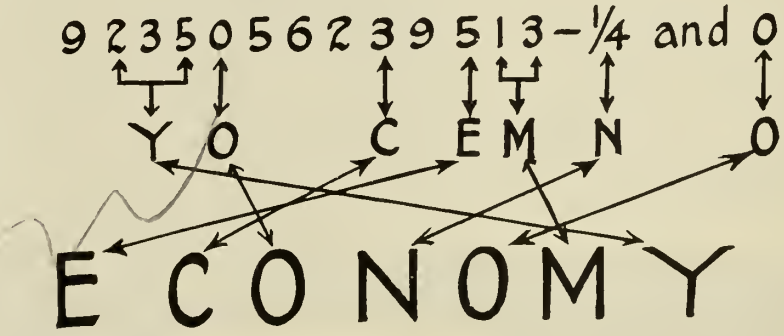
Brubaker Spells Economy

Key

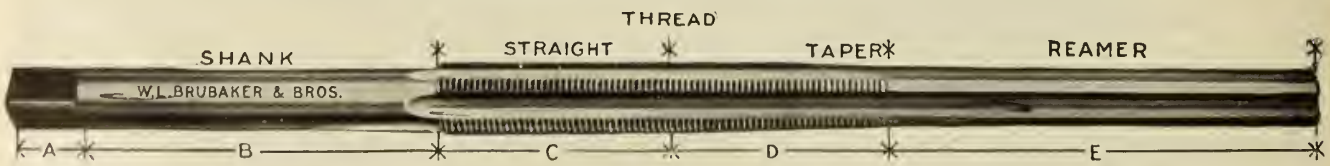
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

Divide "Total Tap Expense" by "Brubaker"

Or by Adding Nothing (0) to the Original Answer and Taking the Spare 2 and 5 to Make the Number 25.



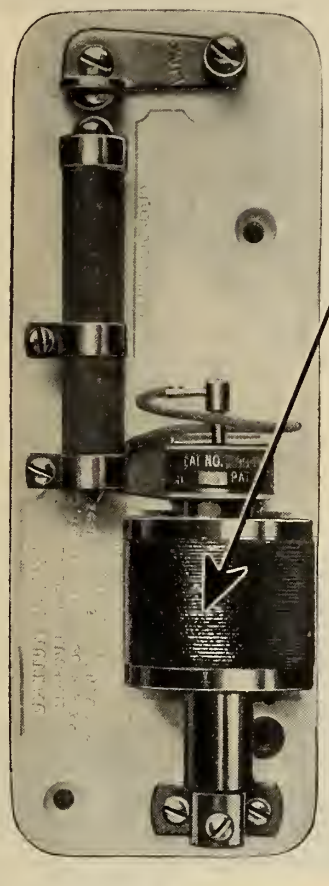
Try Brubaker Taps in Your Shop and Prove This



Canuck Supply Co., Limited

Montreal Toronto Winnipeg Vancouver

This Visible Means of Operation Means What?



First of all, it means that when your lines, cars or power stations are protected with Garton-Daniels Lightning Arresters you have a *positive mechanical means* for cutting off the flow of line current following the discharge to ground.

Which means again that

Garton-Daniels Lightning Arresters

do not ground or short-circuit your lines.

The circuit-breaker breaks this arc *inside the tube* and *not* at the air-gap. There is only a small spark seen at the air-gap, which quietly dies out when the circuit-breaker operates.

And on this account, Garton-Daniels Lightning Arresters can use a very small air-gap in the discharge path. This is only $\frac{1}{40}$ inch in the 600-volt railway type.

This small air-gap does not burn away and so gradually lengthen; it does not blister, close up, and so short-circuit your lines; but it gives you an *efficient arrester* and an arrester that *maintains its efficiency* for years.

Further than this, it gives you a sure means for testing the arrester and the ground. Simply stick the point of a pencil momentarily in the air-gap and "watch the plunger." An advantage that is particularly helpful in enabling you to *know* that every arrester is in good operating condition all the time.

No grounds or short circuits, an efficient arrester, an arrester easy to inspect and test, isn't this the kind you want?

Get Garton-Daniels Arresters and you'll get all these advantages and more.

Electric Service Supplies Co.

PHILADELPHIA NEW YORK CHICAGO
17th and Cambria Sts. 50 Church St. Monadnock Bldg.

Lyman Tube & Supply Co., Ltd.

MONTREAL
323 St. James St.

TORONTO
33 Melinda St.

KILL
LAST AD

Coal Put Into the Pockets For 1½c. Per Ton

And this includes handling some coal to and from storage pile as well as removing the cinders from the pit. The following figures give the daily cost of this Brownhoist Crane for a period of five years of continuous day and night service.

$2.50 Day Operator.	
$2.50 Night Operator.	
$1.50 Coal.	
.05 Black Oil.	
.08 Cylinder Oil.	
.09 Repairs ($165 for 5 years).	With present high prices the cost would be 2¼c per ton.
$1.65 Depreciation.	
.98 6% Interest on Investment.	
$9.35 20 Hrs. Work.	
$2.00 Day Helper.	
$2.00 Night Helper.	
13.35 Total.	

The crane will easily handle 40 to 50 tons each hour and still have plenty of time for handling the cinders and shifting the cars.

But you must remember that this is done with a Brownhoist Crane—the crane that is built for this continuous day and night service. It may cost more, but soon pays for the difference.

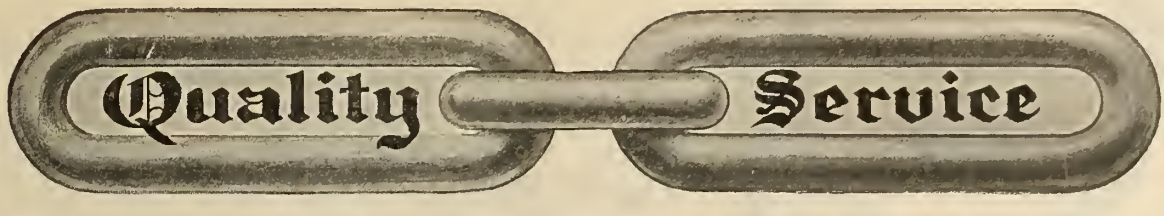
You can have our catalogs I and K if you will write for them. They describe and illustrate the Brownhoist Locomotive Crane.

The Brown Hoisting Machinery Company

CLEVELAND, OHIO

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller cranes and hoists.

Branch offices in
New York, Pittsburgh, Chicago, San Francisco (Portland, Ore., and Colby Engr. Co.)



INDISPENSABLE LINKS

In the Successful Business Chain

Throughout our entire organization, we recognize and adhere to the highest standards of QUALITY and SERVICE. And upon this—in the future as in the past—the expansion and prosperity of our business depend.

IN OUR MILLS AND FACTORIES

Quality

IN OUR SALES DEPARTMENTS

Service

Believing QUALITY and SERVICE are the indispensable links between producer and consumer, we employ their combined strength to conserve and complete our relationship with all users of Steel and Iron products.

THE

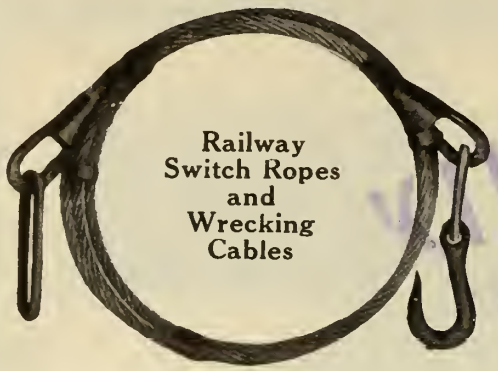
STEEL COMPANY

OF

CANADA

LIMITED

HAMILTON - - MONTREAL



If you want a **WIRE ROPE**

Which embodies

STRENGTH, ELASTICITY & TOUGHNESS

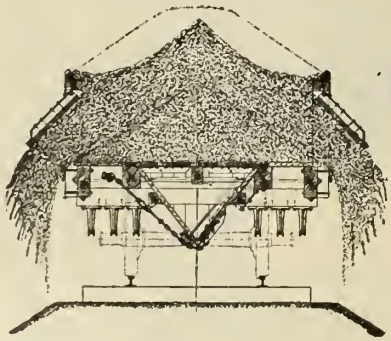
Buy **"DOMINION"**

The DOMINION WIRE ROPE Co., Limited

Montreal Winnipeg Toronto

Hart Convertible Cars

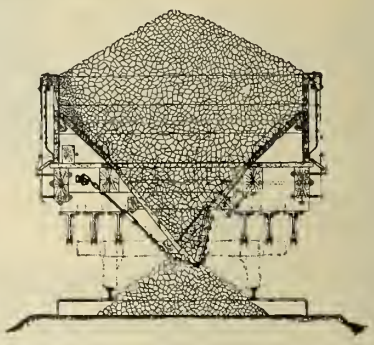
Are Money Savers in **Center** and **Side Dump** Ballast Work



Three Cars in One { BALLAST CAR / CONSTRUCTION CAR / GONDOLA CAR

Use centre dump for ballast and maintenance work and save $200.00 per mile over any other method.
Use side dump for heavy construction work.

The **HART-OTIS CAR CO.** Limited
MONTREAL



"Industrial Works" Cranes

The results obtained by
OUR CRANES
are based on a foundation of
SERVICE—SAFETY—SPEED

"H. & E." Jacks

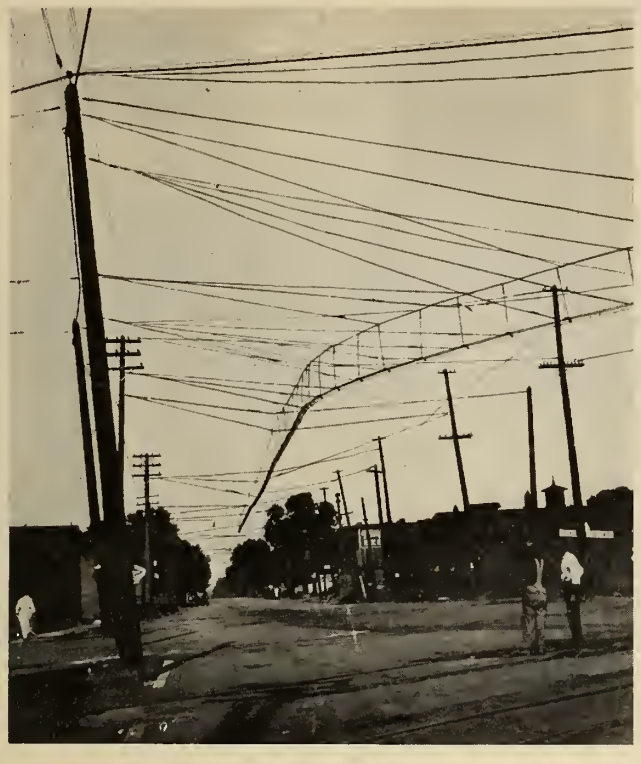
Quickest — Strongest

Branch:
108 Mail Building
TORONTO

F·H·Hopkins & Co

Head Office:
MONTREAL

Eliminate Avoidable Accidents



Grade crossings of steam and electric roads are a necessary evil.

One of the big dangers at such a place is that the trolley wheel will jump the wire and leave a carload of passengers in the path of a train.

National Trolley Guard prevents this kind of a situation. It is an inverted trough of wire mesh which catches the wheel and furnishes power to carry car and passengers to safety.

Both in first cost and maintenance it is an economical safeguard.

The Ohio Brass Co.

Mansfield, Ohio

RESULTS COUNT

That's Why 480 Railroad Shops Are Using Thermit

Thermit offers the only sure and reliable repair for locomotive frames and other heavy sections.

The superheated liquid Thermit steel is produced in bulk and poured all at once into a mold surrounding a broken section, resulting in the perfect amalgamation of the Thermit steel with the parts with which it comes in contact. The fact that those parts are first preheated, makes the weld doubly sure.

The operation of welding locomotive frames is easily accomplished, without removing the frame from position, and with very little dismantling, no matter if the frame be broken in the splice, jaw, next to the cylinder saddle, or at any other point. The engine is returned to service in from ten to twelve hours.

Hundreds of thousands of pounds of Thermit are being used annually by railroad companies in the United States and Canada.

There is only one reason for this, and that is that Thermit produces results and we all know that "results count."

Our pamphlet No. 2144 will be of interest.

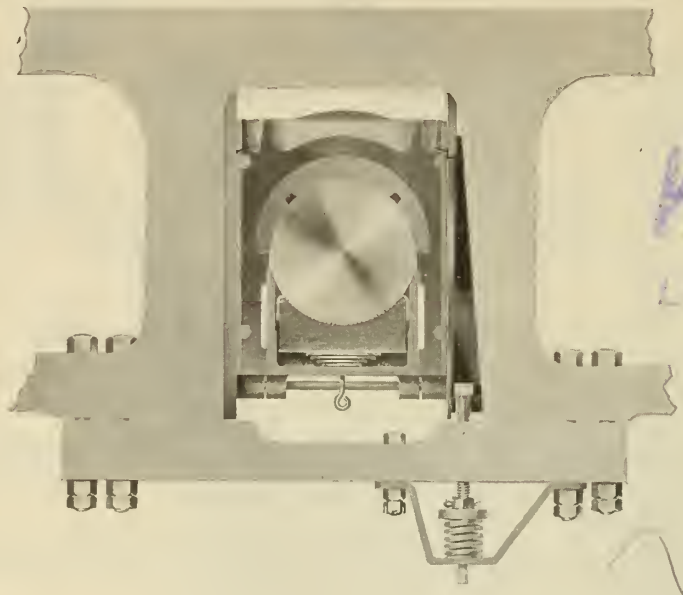
All Thermit and Thermit appliances are made in our Canadian shops.

GOLDSCHMIDT THERMIT COMPANY

103 Richmond St., W., Toronto, Ont.

329-333 Folsom St., San Francisco. Equitable Bldg., 120 Broadway, New York

7300 So. Chicago Ave., Chicago



Help the Overworked Fire

Five years ago 32,000 pounds tractive power required a certain grate area.

Today 45,000 pounds tractive power is supplied with the same grate area.

That's because the grate can't be made any bigger.

This is one reason why we developed the Franklin Steam Grate Shaker.

To help the grates do their work by keeping them free from ash and clinkers.

Franklin Railway Supply Company

TRANSPORTATION BLDG. MONTREAL

Lengthen the Life of Metal Work

It is a hard problem to keep rust and corrosion from eating the very life out of metal structures, therefore, economy demands the best possible preventive against these destructive elements.

CARTER'S
DRY RED LEAD

gives a perfect sealing coat that absolutely protects all kinds of metals from the elements that destroy them, and immeasurably lengthens the life of Metal Work.

We make Orange Dry Lead and Litharge, Special Dry Lead and Litharge, for Color, Varnish and Rubber Makers. Oxides for Potters and Storage Battery Makers.

All products are wholly Canadian made and highest standard qualities.

Ask us for quotations.

The Carter White Lead Co., Limited

91 Delorimier Avenue, MONTREAL

GRAND TRUNK RAILWAY SYSTEM

ALGONQUIN PARK

"Highlands of Ontario"

The Ideal Summer Resort for Camper, Fisherman, Canoeist

200 Miles North of Toronto. 285 Miles West of Montreal. 169 Miles West of Ottawa.
Good Hotel Accommodation. Altitude, 2,000 feet above Sea Level.

Nominigan Log Cabin Camp—In the heart of one of the Best Fishing Districts in Canada.

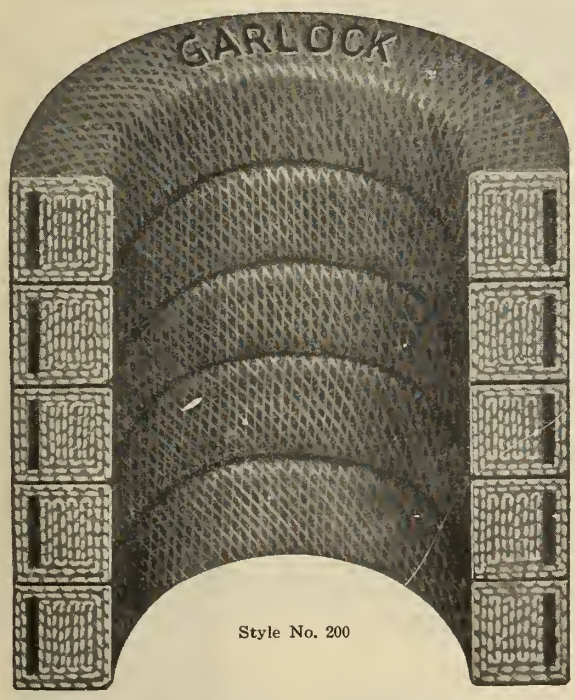
New Log Cabin Camps

This sort of camp is new to the "Highlands of Ontario." They consist of log cabins constructed in groups in the heart of the wilds, comfortably furnished with modern conveniences, such as baths; hot and cold water always available. THE HIGHLAND INN at Algonquin Park Station—accommodation for 200 people, first-class service, reasonable rates.

Handsomely illustrated folder free on application to J. Quinlan, Bonaventure Station, Montreal, or C. E. Horning, Union Station, Toronto

G. T. BELL,
Pasenger Traffic Manager, Montreal.

W. S. COOKSON,
General Passenger Agent, Montreal.



Style No. 200

Garlock High Pressure Piston Rod Packing

Is built up in rectangular form and uniform shape and exact sizes are thereby obtained.

Asbestos packing, which is rolled around a rubber core and afterwards distorted by running through a square die, does not retain its shape or size.

The best materials we can buy are used in the manufacture of our high pressure packing.

The length of service obtained from it is greater than that secured from other makes, therefore the labor cost of applying and adjusting is less.

Our packings are sold at net weights; weights of tubes and boxes are not included.

Every pound of our high pressure packing carries with it the Garlock guarantee of satisfactory and economical service.

We will promptly replace or refund the cost of any of our packings which may prove unsatisfactory to our customers.

THE GARLOCK PACKING COMPANY - Hamilton, Ontario

Branches :
Montreal, Que., 342 St. James St. Toronto, Ont., Continental Life Bldg.
Winnipeg, Man., Galt Building

Locomotive Black

Locomotive Black

KILL
LAST AD.

LOCOMOTIVE BLACK is a finish of unusual merit for locomotives where the best attainable finish is wanted. It possesses extreme elasticity, dries quickly, covers well, spreads easily and produces a brilliant and durable finish that will stand extreme weather and heat exposure to an unusual degree.

Our Hand Rail and Fender Black is the best made. Also made in seven other colors.

BERRY BROTHERS
(INCORPORATED)
World's Largest Varnish Makers
WALKERVILLE, ONTARIO

Now is the time to brighten up targets and semaphores with Berry Bros., Target and Signal Enamels.

50 YEARS IN THE BUSINESS

OVER 60,000,000 FILES A YEAR

The "Famous Five" Files Stand the Wear and Tear of Machine Shop Work

They are made from high carbon steel. The cutting machines are mathematically accurate both as to the number and the depth of the teeth.

The hardening of the file after cutting is done to a fixed standard which insures its remaining hard and sharp for the longest time when in use.

The "Famous Five" files are standard tools everywhere.

Specify them when ordering.

They are:

Kearney & Foot **Great Western**
American **Arcade** **Globe**

Made in Canada By

The Nicholson File Company
PORT HOPE ONTARIO

KILL
LAST AD.

Plan Your Summer Vacation Now

DECIDE to enjoy the rest and recuperation of Body and Brain in one of Canada's Famous National Playgrounds, where the delightful Climate, Magnificent Scenery and unlimited sporting possibilities combine to make the ideal recreation.

Grand Discharge of the Saguenay - Laurentide National Park
Rideau Lakes - Algonquin National Park - Muskoka Lakes
Georgian Bay - Hinterland - Nipigon Forest Reserve
Quetico National Park - Jasper National Park
and Mount Robson Park

All of which are served most conveniently by the **Canadian Northern.**

For Literature and further information apply to nearest C.N.R. Agent, or write to R. L. Fairbairn, General Passenger Dept., 68 King Street East, Toronto, 226 St. James Street, Montreal, or Union Station, Winnipeg, Man.

CANADIAN NORTHERN

10 ft. 0 in. diam. 12 ft. 0 in. Scotch marine boiler for M. Beatty & Sons, Welland, Ont. This boiler was built for 125 lbs. working pressure; has one steam dome 36 inch diameter by 6 ft. 0 in. long, 172 tubes 3 in. x 9 ft. 4 in. long; two Adamson Joint furnaces and smoke box.

Steel Shipbuilders

Engineers and Boilermakers

Dredges, Hydraulic and Dipper Type; Steel Steamers, full Canal Size; Tugs, Barges and Scows

Marine Engines and Boilers, all Sizes

Polson Iron Works, Limited

Works and Office, Esplanade East, Toronto

Dearborn Service Makes Good!

It's only good business for you to investigate any proposition which promises you big economies and big gains in operating efficiency—

Especially when the promises are backed up with records of results on the **leading railways of** the **country,**—

Whom we have not only helped through seasons of extreme water conditions. when the use of DEARBORN TREATMENT alone enabled them to handle trains over their bad water districts—

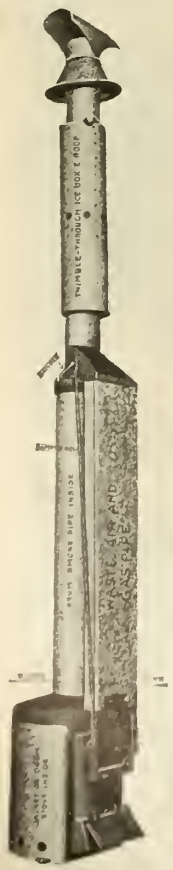
But for whom we are accomplishing **constant benefits,** furnishing preparations adjusted to meet the varying water conditions, handling scale, and leaking troubles, as well as foaming and pitting—

Enabling them to greatly reduce their consumption of fuel and lubricating oil, haul greater tonnage through elimination of foaming, and increase engine mileage, giving longer life to flues and fire boxes, with much less boiler repair work.

Send gallon samples of water for analysis.

Dearborn Chemical Company of Canada, Limited

Office and Works: 1220-1230 Dundas Street, Toronto, Canada



Moore System

Why let Jack Frost freeze your freight, when you can get Moore Car Heaters?

Refrigerator, Heater & Ventilator Car Co.

St. Paul, Minnesota

Workmen like to operate "Imperial" Pneumatic Tampers. They are simple to manage and easy on the men.

Pneumatic Tie Tamping

Cuts Construction Costs, Saves on Maintenance

Two men with Tie Tampers will tamp more track and do it better than six to ten men can do by hand.

Experience also shows that the road bed remains in surface much longer than when hand tamped.

Bulletin 9023 shows what you will need.

Your address sent our nearest office will bring prices and full particulars.

Canadian Ingersoll-Rand Company, Limited

Commercial Union Bldg., MONTREAL, CANADA

Works: SHERBROOKE, QUE.

SYDNEY TORONTO COBALT TIMMINS WINNIPEG NELSON VANCOUVER

McGRATH LEATHER TESTER

A test of FABRIKOID, Craftsman Quality—the upholstery grade — and the grade of split leather extensively used for car, cab and caboose upholstery—conducted as illustrated—showed that FABRIKOID, Craftsman Quality, required a weight of 350 pounds to tear it, whereas only 157 pounds caused a tearing of the split leather—a conclusive proof of our claim of FABRIKOID'S strength and consequent durability.

UPHOLSTER YOUR CARS IN

CRAFTSMAN QUALITY

DU PONT FABRIKOID
REG. U. S. PAT. OFF.

It Is Guaranteed to Wear Better Than the So-Called "Genuine Leather",—the Split Sections of a Hide Coated and Embossed to Look Like Grain Leather

FABRIKOID is a manufactured product made of a super-strong cloth coated with a WATER-PROOF material. The surface is embossed in various grains to produce the same grain effects associated with leathers. FABRIKOID, Craftsman Quality is used especially for passenger, trolley, engine cab and caboose upholstery. It is impervious to grease; is not affected by temperature and stands the rub of service. It is distinctive in looks, wears longer and better than "coated splits" and costs less to buy and apply.

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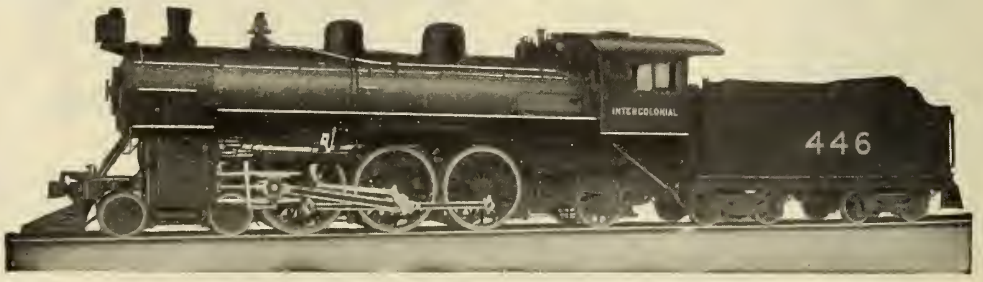

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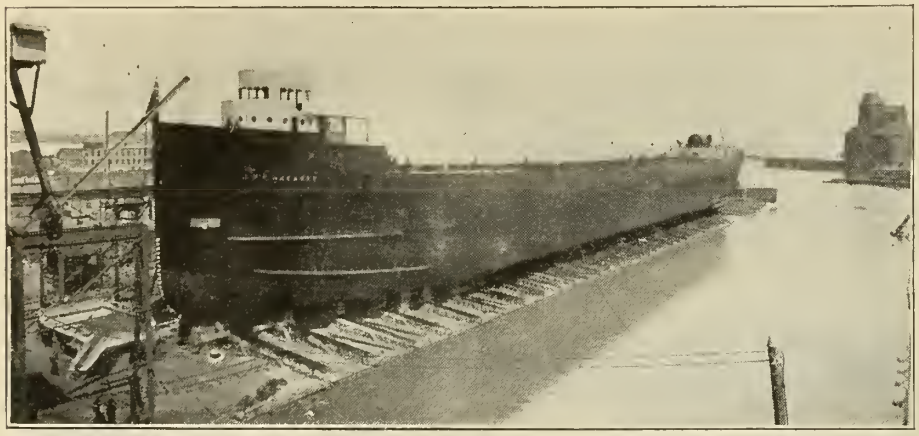

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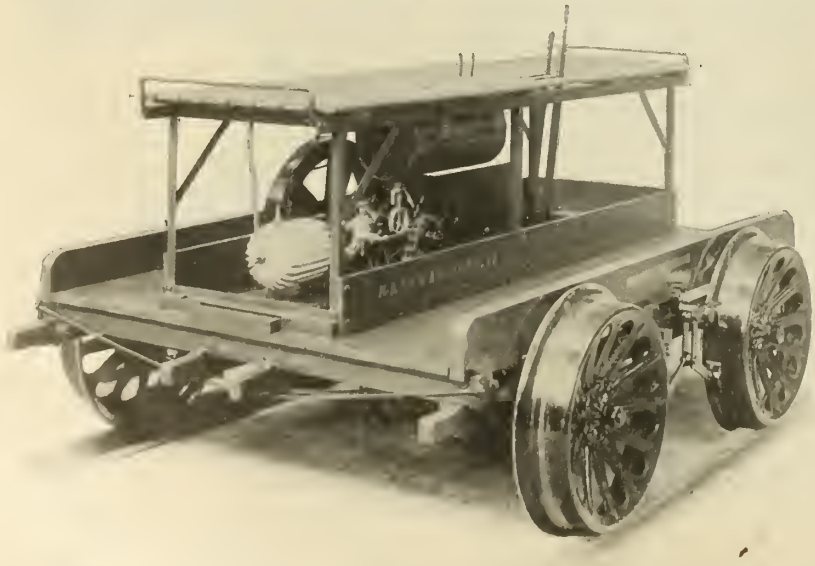

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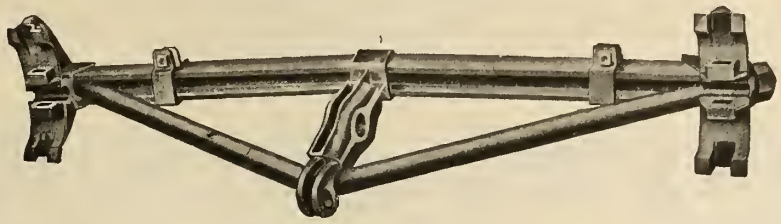

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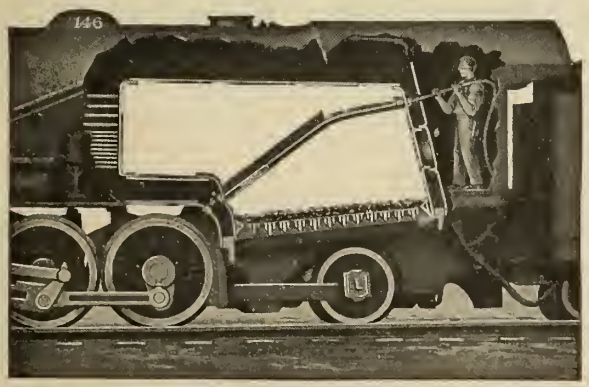

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Canadian Railway and Marine World

May, 1917.

Halifax Ocean Terminals and Connecting Railway.

By A. C. Brown, A.M.Can.Soc.C.E.

Halifax, which was founded in 1749, and is and has been since its foundation the chief city of Nova Scotia, is situated on one of the finest harbors in the world, and is the nearest equipped terminal port to Europe open all the year round, being over 250 miles nearer to Liverpool than any other terminal either in Canada or the United States. With such a splendid geographical situation it should be the main eastern gateway of Canada. The average course of steamers from Liverpool to New York brings them within about 19½ miles of Halifax, so with adequate terminal facilities and first class rail connections, in the event of steamships making Halifax a port of call, passengers could be in Chicago by the time the ships arrived at New York. In addition to European trade, Halifax is well situated for trade with the West Indies, the ports of the United States, and, with the perfecting of the Panama Canal, for trade with the west coast ports of Canada. In addition to being splendidly situated as a terminal port and a port of call, Halifax has an almost ideal situation should a section of the harbor be at any time reserved as a "free port," that is, a port where ships could come and discharge cargoes free of duty and take up either cargoes left by other ships, or cargoes from the interior. So long as merchandise did not pass beyond the free port area no customs duties would be charged, the only charges being those for wharfage and warehouse space.

Halifax harbor consists of two parts, the outer harbor and Bedford Basin. The outer harbor is 7 miles long and about 1½ miles wide, except at the Narrows, where it joins Bedford Basin, where it is ¼ of a mile wide. Bedford Basin is 4 miles long and 2 miles wide. The entrance to the harbor is straight and the water deep, while inside there is enough room for the largest ships to manoeuvre with the greatest ease. There is a freedom from currents and severe storms, and the range of the tide is only 2½ ft. at ordinary spring tides. The harbor, too, is well protected, there being only one open entrance with the Atlantic Ocean. The configuration of the shore at the entrance effectually breaks up Atlantic swells, so that no very large waves can enter the harbor.

In addition, however, to the fundamental need of accessibility and accommodation, special requirements of good terminal facilities, quays, sheds and railway approaches and yards are necessary before a harbor can be used. It is indispensable to the conditions of modern trade that there should be the least possible delay in the reception and dispatch of vessels, and everything must be done to procure continuity of operation, and for this reason the location, construction and equipment of quays within the harbor is of the utmost importance. The old railway wharves and yards at Richmond and the deep water terminals, are situated on a narrow and restricted foreshore, with inadequate railway connections and with no possibility of any great extensions on economic lines. The existing railway terminals provide the following accommodation: At Richmond: Pier 6, 80 ft. wide with berths 280 and 400 ft. long; Pier 7, a bulkhead wharf 500 ft. long; Pier 8, 120 ft. wide with berths 650 and 740 ft. long; Pier 9, bulkhead 700 ft. long. At deep water: Pier 2, 240 x 700 ft.; Pier 3, 160 x 600 ft.; Pier 4, 95 x 540 ft.; Pier 5, 35 x 400 ft. With the exception of Pier 2, which is of reinforced concrete and is thoroughly modern in every repect, all the piers are of timber pile construction, and are generally in poor condition. In addition to this accommodation there are about 10 privately owned wharves from 200 to 600 ft. long, all being built of timber, with the exception of the Furness wharf, which is being built of reinforced concrete.

Complete Scheme for Halifax Ocean Terminals, looking from the Harbor.

In June, 1912, surveys, both land and hydrographical, were commenced, and a thorough investigation with test borings, soundings, wind and current observation made with the object of obtaining a suitable site for a system of terminals which should comply with the standard required by the Dominion Government, which may be briefly summed up as follows: 1. The location should be the best the harbor could provide. 2. The work should be first class and permanent. 3. As soon as possible accommodation for 9 modern steamships. 4. A possibility of future extensions. 5. All accommodation to be designed with due regard for possible increase in the size of vessels and the increase in trade. After a very careful engineering and economic study of the whole situation had been made, the Minister of Railways and Canals was able, in Nov., 1912, to make public the proposed scheme of terminals.

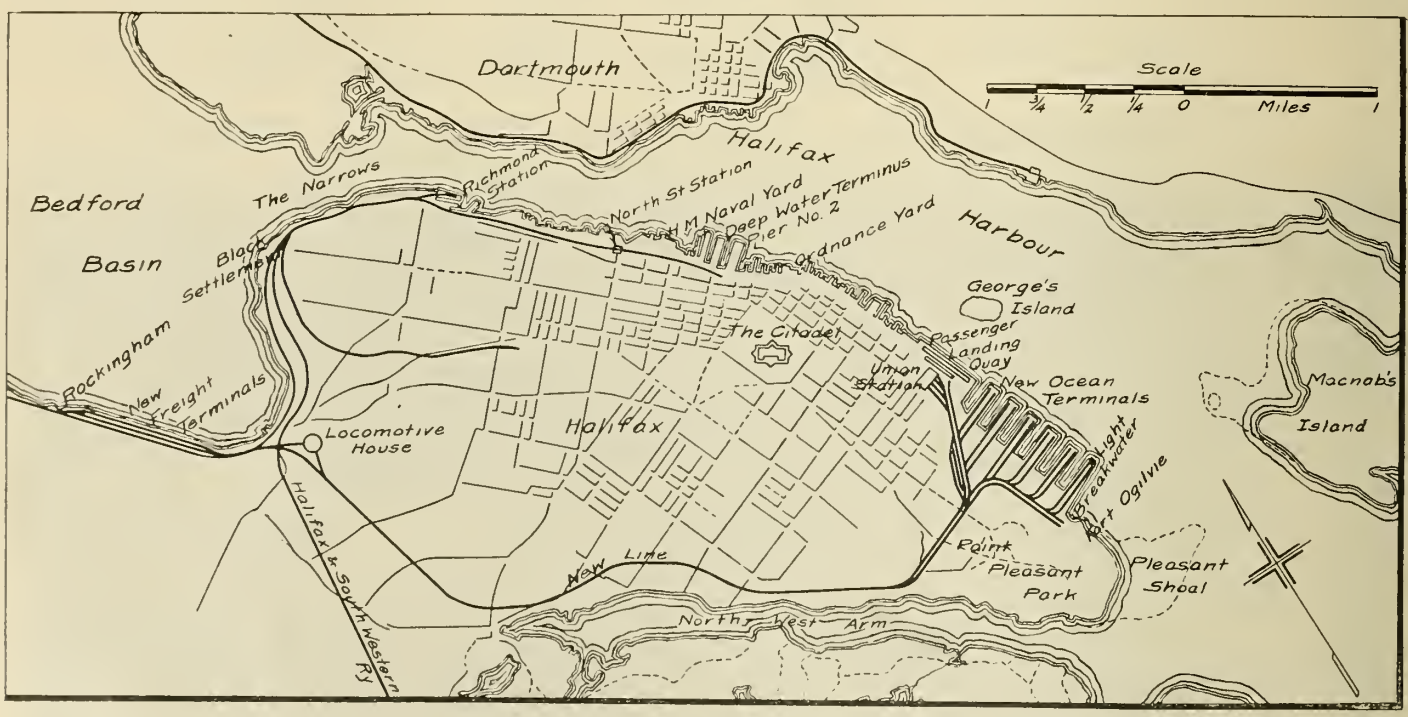
The ocean terminals are situated on the

Halifax side of the harbor and extend southward from the Nova Scotia Tramways & Power Co.'s property for about 1¼ miles to Reid Rock. The terminals consist of a passenger landing quay 2,006 ft. long, 5 piers 1,250 ft. long by an average width of 350 ft., and a breakwater about 1,600 ft. long, on the north side of which will be constructed later 2 steamship berths. On the north side of the first basin are two berths, 500 and 700 ft. long. With the exception of these 2 berths, which will have 30 and 35 ft. at l.w.o.s.t, 45 feet. at l.w.o.s.t will be provided at all the berths. The whole system will be equipped with modern sheds, freight handling appliances, grain elevators, ample tracks and all requirements pertaining to modern terminals.

Connecting Railways.—In order to provide railway connections with the new terminals an extension of the Intercolonial Ry. was necessary. Many locations for this extension were studied, and finally, after careful consideration, it was decided to construct a line diverging from the Intercolonial Ry. at Fairview. Great care has been taken in the location and design of the bridges, for grade separation of railway and highway traffic, to preserve, as far as possible, not only the beauties and amenities of the Northwest Arm, which from a tourist point of view is the city's greatest asset, but also of the suburban district through which the railway passes. From the crossing over Chebucto Road the railway follows the east side of the Northwest Arm to Maplewood, and from thence passes easterly in a deep cutting to the site of the terminals. Grade crossings are eliminated, the railway crossing over the highways at Fairview Road by steel girder spans with concrete abutments and over Chebucto Road by steel girder spans encased in concrete, the remaining highways and streets being carried over the railway on ornamental reinforced concrete arches. The railway is about 5 miles long and is to be double tracked throughout, with 4 tracks at Bower Road and branching out into the yard with 16 tracks at Tower Road. The maximum grade for eastbound traffic is to be 6/10 % compensated 0.04% per degree of curvature, and the sharpest curve will be 4 degrees with standard spirals.

The yard at Point Pleasant will have the following capacity: Freight storage and classification, 840 cars; elevator tracks, 200 cars; passenger car cleaning and storage, 296 cars; train shed, 119 cars. At Fairview is a new freight receiving, classifying and departure yard, with a capacity of about 1,600 cars, to accommodate all inward and outward bound freight. A large union passenger station will be erected on the site of what was H.M. lumber yard, near South and Hollis Sts., convenient alike to both the business and residential centres of the city. In general, the passenger station will be a T-shaped granite structure, the building on the bulkhead passenger landing quay forming the head of the T. The portion known as the city station will face on a plaza located between South and Tobin Sts. In the bulkhead passenger landing quay building, connected with the station proper, accommodation will be provided for all classes of passengers. The main trunk sewer, known as freshwater sewer, which heretofore has discharged within a few hundred feet of Pleasant St., detracting somewhat from the desirability of the old Esplanade district, will be diverted and will discharge at the head of pier A, over 1,400 ft. from the street. When the terminals are completed over 115 acres of land will have been reclaimed from the area to form the piers and quay spaces.

Railway Construction.—The work of constructing the new railway was commenced toward the end of July, 1913, at Fairview, and a month later at the harbor end. A thoroughly up to date equipment, consisting in all of two 100-ton, two 60-ton, and one 70-ton steam shovels, complete, and a 20-ton steam locomotive crane, was gradually brought on to the work, which was prosecuted with great energy. The cuttings, which are long and deep, as much as 60 ft. in parts, consisted mostly of rock, a shale, very seamy and stratified, with an occasional trace of iron stone and trap rock. Owing to its shattered formation the rock proved very troublesome to drill and shoot, and several types of drills were used, including both electric and steam, which drilled holes from 2¼ in. diameter upward to 5⅝ in. The well drills, drilling a hole 5⅝ in. diameter, gave the most satisfactory results in the main cutting, as owing to the shattered and seamy condition of the rock and the presence of layers of sand and gravel, it was in most cases necessary to case the holes for a considerable depth. South of Quinpool Road to the terminal yard most of the drilling was done with well drills. Where the cut was deeper than 30 ft. it was drilled and shot for its full width in two lifts, and where it was less than 30 ft. deep it was drilled and shot in one lift. The holes were placed usually about 9 ft. apart in rows 6 ft. apart, staggered and drilling to 6 ft. below subgrade and loaded without springing. The drilling in the terminal yard was mostly side hill work and was done mainly with electric drills, drilling a hole 2¼ in. in diameter. The holes were drilled in 8 ft. squares and sprung. This was the most satisfactory piece of work as regards drilling and shooting on the whole cutting. The shooting of the rock in the Fairview end of the cutting presented many difficulties, the rock being very faulty, containing pockets of rotten, disintegrated rock, mud, clay, gravel and sand, as well as water. The cut was drilled and shot no less than three times before it could be completely excavated. The first time holes were drilled with well drills at 9 ft. centres in rows 16 ft. apart. It was intended to spring these, but most of them caved in and were lost; as many as possible, however, were shot and a shallow cut taken. The second time the holes were drilled 10 ft. apart in rows 8 ft. apart to 6 ft. below subgrade and shot without springing, but this was not entirely successful. The third time the holes were drilled 10 ft. apart in rows 5½ ft. apart, staggered, and to 6 ft. below subgrade without springing. Even this did not break the bottom of the cut properly, and the further use of piston drills was necessary for that purpose. A low freezing explosive was used on account of the presence



Site of Halifax Ocean Terminals and Union Passenger Station, with Double Track Railway from Main Line at Rockingham.

of very cold water in many of the drill holes. Most of the shooting was done in blasts of from 3 to 8 tons of 60% forsite (low freezing), calculated on a basis of from 1⅛ to 2 lb. of explosive to the cubic yard of material blasted, according to the nature of the rock. It was very clearly demonstrated in the extremely shattered rock encountered that the electrically driven drills were much superior to the steam driven. Owing to the impossibility of keeping the steam at an even pressure, the time of the stroke of the drill constantly altered, and if it was working slowly when it passed from a hard into a seam of disintegrated rock it jammed. With the electric drills, however, as the strokes were steady, very little of this trouble was encountered. It is worthy of record that although most of the blasting done was in close proximity to houses and streets, very little damage was caused, and there were no serious accidents either to the general public or to the workmen employed.

The material from the railway cutting was used to reclaim the freight yard on Bedford Basin, where there is now standing room for 1,600 cars, and also for filling in quay spaces at the terminals and for the construction of the breakwater at the south end of the piers. Approximately 2,000,000 cubic yards of material was used to reclaim the feright yard on Bedford Basin at Fairview was constructed with 16 cu. yd. standard gauge side dump cars by the usual side dump methods, and faced with heavy rip rap placed by means of a 20-ton locomotive crane.

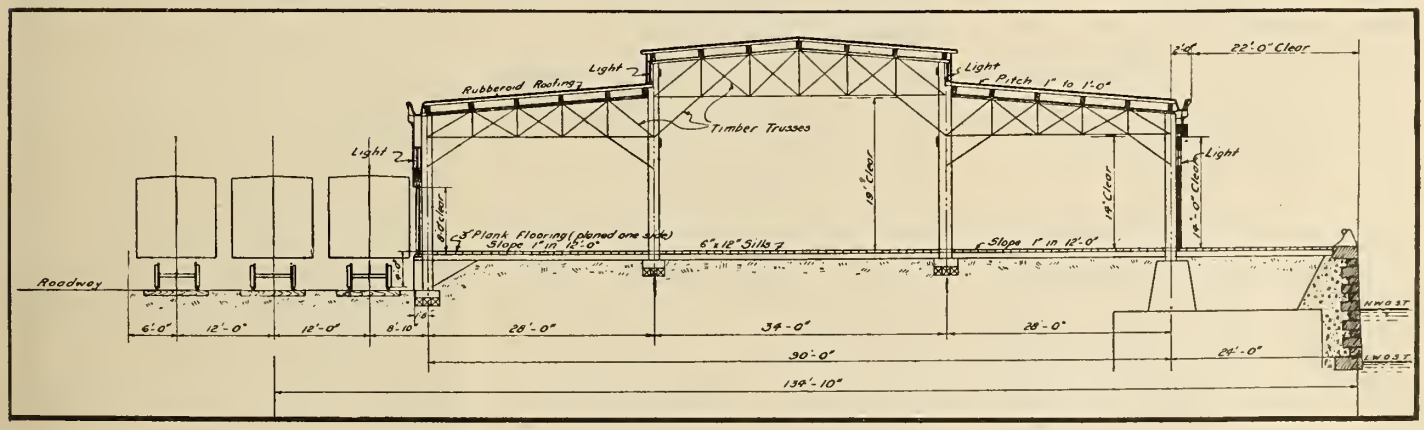
Bridges.—In connection with the railway running in from Fairview to the terminals, 16 bridges are called for. Of these 14 are highway bridges, arch type, constructed entirely of reinforced concrete. The one carrying the Halifax Ocean Terminals Ry. over the streets at Fairview is to be built of plate girders in a single span, and will have a concrete deck only. The other carrying the railway over Chebucto Road is to be built of plate girders in 3 spans, that is, 2 sidewalk spans and the roadway span. This bridge will be entirely cased in concrete. The single spans for highway bridges vary from 60 to 144 ft. At Young Ave., the double span arch is to be approximately 225 ft. between main abutments, All abutments and wing walls are built on solid rock and are of mass concrete. Work was commenced on these bridges in the latter part of June, 1916, and the work completed during the year was as follows: 10 bridge sites excavated complete; 6 bridge main abutments and wing walls complete; 2 reinforced concrete arches complete and backfilled.

The breakwater, which is now completed, is 1,600 ft. long and 30 ft. wide at the top, and is of the mound type. It is situated at the extreme south end of the terminals. Three hundred ft. inside the end of it is a huge rock which extends to within 7 ft. of l.w.o.s.t., and immediately to the south of it is Point Pleasant Shoal, the end of which is marked by a buoy. The end of the breakwater is inside the line of the fairway so that it does not interfere with navigation. Point Pleasant is very shallow and affords a great protection to the terminals by breaking up much of the Atlantic swell. The waves which come round the end of the shoal and heretofore broke on the shore between it and the northern limit of the terminals are caught by the new breakwater. Observation has shown that since the completion of the breakwater a swell entering the harbor passes up the fairway parallel to the bulkhead passenger landing quay and past the ends of the piers. The breakwater conists of a rock dump, the centre core being run of cut material and the sides and end faced with heavy rip rap from 2 to 8 tons in weight. The top is roughly paved with heavy rock. The shore end of the breakwater was dumped by 16 cu. yd. standard gauge side dump cars from a temporary wooden trestle for a length of about 300 ft., and from that point from a steel span 40 ft. long, supported at its inner end by the breakwater itself and at its outer end by a scow, 34 ft. wide and 90 ft. long, subdivided by bulkheads and provided with a steam hoisting engine for moving the span, and a centrifugal pump for adjusting the scow by means of water ballast to suit all stages of the tide. The scow also carried a tail track for 3 empty cars, so that 4 cars could be dumped with one switching. The rip rap with which the sides are faced was placed by a 20-ton locomotive crane. The breakwater has been of great assistance in protecting the dock contractors' floating plant in basins 1 and 2, and the work of constructing it has been carried on without serious delay and without loss or damage to the contractors' plant since June, 1914, during which time Halifax harbor experienced average weather conditions.

Docks.—In Jan., 1913, the contract was let for the first and perhaps most important unit of the docks. This contract includes the construction of the bulkhead passenger landing quay 2,006 ft. long, north quay basin no. 1, 700 and 500 ft. long, and pier A, 1,250 ft. long, 320 ft. wide at the head and 360 ft. wide at the bulkhead, the north return wall 225 ft. long, and the bulkhead walls of basins nos. 1 and 2, 95 and 320 ft. long respectively, making over 1¼ miles of quay wall. Forty-five feet of water at l.w.o.s.t. is being provided at the ocean berths except those on the north quay of basin 1, where the water is 35 and 30 ft. at l.w.o.s.t. The contract also includes the dredging of basins 1 and 2 and for and in front of the bulkhead passenger landing quay, the provision of from 1,000,000 to 1,500,000 cu. yd. of filling to make up the quay spaces and to fill pier A, reinforced concrete pile freight shed foundations and the construction of a new sewer outfall for the south end of the city.

The quay walls are constructed of cellular reinforced concrete blocks, faced with cut granite masonry from 1 ft. below low water to quay level and finished with a cut granite coping 3 ft. wide, no concrete is therefore exposed to the action of frost between high and low water, a most important feature in Halifax harbor where concrete between high and low water shows a great deterioration due to frost action. Mooring hooks or bollards, designed to correspond and fit in with the granite coping, and to safely withstand a pull of 75 tons, are to placed along the face of the quays at intervals of 88 ft., and closer where necessary. In order to balance the pull on the mooring hooks the walls at these points are to be anchored back to concrete blocks by 2¾ in. diameter steel anchor ties. Granite boat stairs and landings are to be provided at the pier heads, the heads of basins and at both ends of the landing quay. Wrought iron ladders are spaced at about every 264 ft. along the faces of the quays.

Temporary freight sheds have been erected at two berths on the north side of basin 1. One shed is 90 x 396 ft., and will eventually be extended to 506 ft., while the other shed is 90 x 440 ft. Both sheds are of timber construction with 22 ft. bays and 4 rows of 12 x 12 columns, the bays being spanned by 28 ft. trusses, and the centre bay by a 34 ft. monitor truss. The 2 in. shiplap roofing is carried on 6 x 12 purlins, 6 ft. centre to centre, and is covered by 2 ply roofing paper. The 3 in. flooring is carried on 6 x 12 mud sills, 4½ ft. centre to centre. Contiuous sliding doors are provided front and rear ,the front or basin side giving a clear opening 14 ft. high, and the rear doors 8 ft. high. Four continuous rows of windows 10 x 12 in. glass, 2 lights high, give ample light by day, and one 200 watt and two 100 watt lamps per bay are sufficient at night. Offices and lavatories for customs, railway and overseas officers are located in the west end of the first shed, while the longshoremen's toilet and gear room are in the west end of the other shed. Three tracks at the rear of



Cross Section of Timber Freight Sheds, Halifax Ocean Terminals.

each shed will accommodate 36 cars at one shed and 42 cars at the other. The sheds are set back 24 ft. from cope line. Each shed when full will hold about 3,000 tons of miscellaneous freight.

The works are now well advanced, and although the first block was only set on the north quay on basin no. 1 on Sept. 27, 1915, the following work has since been done on the quay walls: 900 lin. ft. of wall on north quay basin no. 1, and 700 lin. ft. on north quay, pier A, have been completed to the top of the granite work, while in addition 200 ft. on north quay basin no. 1; 836 ft. south quay, pier A; 300 ft. north quay, pier A; 660 ft. on passenger landing quay, and 95 ft. of wall on west quay basin no. 1 have been completed to the top of the blockwork. This makes a total of 3,761 ft. of wall built to above high water, and from 52 to 60 ft. high in 15 months, or an average of over 270 lin. ft. of wall per month. All this block setting was done with one block setting crane, although there are now two on the works. Three berths on basin no. 1 are in use, the two on the north side being equipped with temporary freight sheds.

The foregoing is extracted from a paper read before the Canadian Society of Civil Engineers in Montreal recently.

Colliery and Logging Railways in British Columbia.

The B. C. Legislature has under consideration a bill to amend the Railway Act, by bringing within its jurisdiction colliery, logging and other railways not at present subject to it. The new section provides that it is to apply to any "company, persons, firm or corporation" operating a railway or tramway to which the present railway act does not apply, and that a "railway" within the meaning of the section is the undertaking of any company which is declared to be a railway by the Minister's certificate. The Minister may declare what provisions of the Railway Act are to apply to such railways, and no such railway can be operated without the Minister's consent, and then only upon conditions imposed by the Lieutenant Governor in Council.

It was explained on the second reading of the bill, Mar. 15, that it is the Government's desire to look after the construction and operation of short colliery railways, logging railways, and all other railways or tramways at present in operation, under private ownership.

St. John River Hydro Electric Co.—The New Brunswick Legislature has been asked to revive and amend the company's charter, which was granted in 1913, and to extend the time for the construction of the various works authorized. The company was empowered to develop a water power on the St. John River, between the entering in of the Shogomoc and the Pokiok Rivers, and to transmit the electric power. The dam to be built across the river is to be provided with a lock sufficient to permit of navigation being carried in. In return for the privilege the company is to pay a rental of $4,0000 a year and 25c a year per constant horse power sold for 20 years from the first delivery of power, when the rate is to be revised. The company's office is to be at Fredericton, the provisional directors named being: M. E. Agar, W. A. Clousie, R. M. McCarty, St. John, N.B.; F. J. Boyer, Victoria Corner, N.B.; R. B. Harrison, Fredericton, N.B., and H. Guernsey, London, Eng.

Birthdays of Transportation Men in May.

Many happy returns of the day to:

Jas. Bain, General Superintendent, Halifax & South Western Ry., Bridgewater, N.S., born at Pictou, N.S., May 24, 1860.

W. R. Baker, C.V.O., ex-Secretary, C.P.R., Montreal, born at York, Eng., May 25, 1852.

B. A. Bourgeois, Assistant to Comptroller and Treasurer, Canadian Government Railways, Moncton, N.B., born there May 24, 1869.

G. S. Cantlie, ex-General Superintendent of Car Service, C.P.R., Montreal, now in military service with Canadian Overseas Forces, born at Montreal, May 2, 1867.

B. T. Chappell, Superintendent, Pacific Division, Canadian Northern Ry., Vancouver, B.C., born at Charlottetown, P.E.I., May 1, 1878.

N. R. DesBrisay, District Passenger Agent, C.P.R., St. John, N.B., born at Minneapolis, Minn., May 18. 1888.

M. Donaldson, M.Can.Soc.C.E., Vice President and General Manager, Grand Trunk Pacific Ry., Winnipeg, born near Edinburgh, Scotland, May 1, 1851.

A. E. Duff, ex-District Passenger Agent, G.T.R., Toronto, now of Winnipeg, born at Sherbrooke, Que., May 1, 1872.

G. C. Dunn, Division Engineer, Grand Trunk Pacific Ry., Winnipeg, born at Quebec, May 13, 1862.

M. A. Fullington, A.M.Can.Soc.C.E., ex-Superintendent, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont., born at Johnson, Vt., May 12, 1880.

Edward Garrett, Superintendent, Park & River Division, International Ry., Niagara Falls, Ont., born at Cataraqui, Ont., May 24, 1868.

G. E. Graham, General Manager, Dominion Atlantic Ry., Kentville, N.S., born May, 1870.

G. H. Hedge, General Master Mechanic, Western Lines, Canadian Northern Ry., Winnipeg, born at Neath, Wales, May 26, 1865.

W. T. Huggan, Divisional Accountant and District Passenger Agent, Prince Edward Island Ry., Charlottetown, P.E.I., born at Halifax, N.S., May 24, 1851.

J. Irwin, Superintendent, Toronto District, Ontario Division, Canadian Northern Ry., Trenton, born at Clinton, Ont., May 28, 1866.

S. McElroy, Trainmaster, Canadian Northern Ry., Rainy River, Ont., born at Lindsay, Ont., May 1, 1875.

W. Marshall, Assistant Manager of Telegraphs, C.P.R., Winnipeg, born at Garden Island, Ont., May 18, 1859.

J. N. Murphy, Trainmaster, C.P.R., Brandon, Man., born at Mooretown, Ont., May 10, 1879.

W. J. Rooney, Divisional Superintendent of Telegraphs, Alberta and British Columbia Lines, Grand Trunk Pacific Ry., Edmonton, Alta., born at Toronto, May 22, 1882.

A. C. Shaw, Passenger Department, C.P.R., Montreal, born at Detroit, Mich., May 12, 1865.

W. H. Snell, General Passenger Agent, C.P.R., Montreal, born at Palmyra, Neb., May 23, 1872.

C. T. Stanger, District Freight Agent, C.P.R., Saskatoon, Sask., born in Rutland, Eng., May 11, 1887.

W. Stapleton, District Passenger Agent, Canadian Northern Ry., Saskatoon, Sask., born at Bristol, Eng., May 20, 1884.

E. Tiffin, General Western Agent, Canadian Government Railways, Toronto, born at Hamilton, Ont., May 5, 1849.

J. H. Walsh, General Manager, Quebec Central Ry., Sherbrooke, Que., born at Quebec, May 12, 1860.

H. K. Wicksteed, B.A.Sc., M. Can.Soc. C.E., Chief Engineer of Surveys, Mackenzie, Mann & Co., Ltd., Toronto, born at Quebec, May 25, 1855.

C. L. Wilson, Assistant General Manager, Toronto & York Radial Ry., Toronto, and Vice President, Canadian Electric Railway Association, born at Boston, Mass., May 23, 1871.

A. O. Wolff, Resident Engineer, Chapleau Division, Algoma District, C.P.R., Chapleau, Ont., born at Copenhagen, Denmark, May 14, 1887.

James Yeo, ex-Roadmaster, Intercolonial Ry., Riviere du Loup, Que., born at Bideford, Devonshire, Eng., May 1, 1830.

First Aid Competition on the G.T.R.

First aid teams from the principal terminals on the G.T.R. met in competition in Montreal recently for the Chamberlin silver shield. Montreal team, no. 1, from the Point St. Charles shops, proved successful; Stratford team won second honors; Battle Creek third, and Belleville fourth. Eighteen teams entered the competition. The Deputy Commissioner and the General Secretary, Canadian Branch, St. John Ambulance Association, complimented the teams on the efficiency shown. The shield was presented to the winning team by W. D. Robb, Superintendent of Motive Power, acting for President Chamberlin, who could not be present. He stated that the work done by the St. John Ambulance teams in the company's shops earned the commendation of the G.T.R. Executive, and that it planned to further extend the movement to bring in men working on trains.

The Grain Growers' Grain Co., with a separately incorporated export department in New York, will, according to a New York report, consolidate early in the autumn of this year, with the Alberta Farmers' Elevator Co., the latter company's assets being transferred to the former, and the capital stock increased to $3,000,000. This will, says the report, bring under one management, 250 country elevators in Manitoba and Alberta, the company also operating under lease, two of the C.P.R. terminal elevators and warehouses at the head of the lakes. It is also stated that the Saskatchewan Co-operative Elevator Co., conrolling 230 elevators, will also be absorbed.

The Quebec Passenger & Elevator Co. has been incorporated under the Quebec Companies Act, with a capital of $50,000, and office at Quebec, to convey passengers, freight, baggage, luggage and merchandise by means of elevators, hoisting machines, vehicles, motor cars or other motive power, and for that purpose to do all that is necessary, provided that nothing shall confer on the company the power to build, own or operate any line of railway. The provisional directors are: Jas. M. McCarthy, C. E. Taschereau, J. P. Cantin, F. S. Lee and Nap. A. Giguere, Quebec.

Calabogie Power Development.—The Renfrew, Ont., Town Council has passed a bylaw confirming an agreement with M. J. O'Brien, railway contractor, etc., for a franchise for power development at Calabogie.

A Solution of the Canadian Railway Problem.

By Sir Thomas Tait

Sir Thos. Tait, at one time in the C.P.R. service, in which he was Manager of Transportation in 1903, when he resigned to become Chairman of the Victorian Railways Commission at Melbourne, Australia, a position he occupied for seven years, and who since his return to Canada, in 1911, has been President of the Fredericton and Grand Lake Ry. & Coal Co., which built a railway in New Brunswick that has been leased to the C.P.R., and which operates a colliery on the line, has issued a booklet under the title given above. In starting he says "The Dominion of Canada owns or controls and operates a railway system, the main lines of which extend from Sydney, Halifax, and St. John, on the Atlantic seaboard, to Quebec and Montreal, and from Quebec to Fort William and Winnipeg, and there is, therefore, today in Canada the administration by the state of about 4,000 miles of railway and competition between company railways and a state owned and operated railway system extending more than half way across the continent."

In view of Sir Thomas' experience as head of a state owned system in Australia, there is considerable significance in his second paragraph, in which he says: "In view of certain conditions which, it is to be regretted, prevail in this country and in which there appears no promise of early improvement, the efficient administration along business lines of state railways in Canada by the Government, even by means of a so-called 'independent' board of commissioners cannot be confidently anticipated. It is generally the experience in democratic countries having state railways, that it is impossible to eliminate political influence, exerted if for no other reason than to promote and advance the interests of the political party in power, and, undoubtedly in such countries as the United States and Canada, where political partisanship runs so strong, and political patronage has so long been the custom, prudent and efficient management of railways by the state would be found sooner or later to be impracticable owing to political interference and influence."

Sir Thomas continues: "Competition between state owned and operated railways and company railways is inequitable and unfair to the private investor in the latter. Money for construction and equipment can, generally speaking, be borrowed or obtained by the state on considerably better terms than by companies and, therefore, state railways are not expected or required to earn as large a return on their cost as investors in company railways, especially shareholders, look for and should receive. If everything else therefore be equal—an important and improbable proviso—the rates and fares on state railways do not require to be as high as on company railways. Due to the exercise of political influence, rates and fares on state railways are liable to be reduced, and indeed as a rule are reduced, and train services and other facilities are provided beyond what the traffic and other conditions warrant, and these lower rates and fares, and these unjustified facilities, must be conceded by competing company railways if they are to retain their fair share of the traffic.

"In view of the possibility, if not the probability, of the Dominion being compelled to take over the Canadian Northern system and the Grand Trunk Railway from Winnipeg to Prince Rupert, with its branch lines, the question arises whether in such event the difficulties and disadvantages of state administration, on the one hand, and the injustice of state competition with private enterprise, on the other hand—both of which will be greatly aggravated and increased should the present state railway system be extended from Winnipeg to the Pacific Coast and throughout our western provinces—might not be avoided. The following is an outline of a scheme whereby both the advantages which may be derived from the ownership of railways by the state and the good results which should accompany efficient administration by a company may be obtained and to these should be added the great advantages, including a very large saving in operating expenses, which would result from all the more important railways of Canada being managed and operated as one great system.

"It is assumed that the Dominion can acquire all the common stock of both the Canadian Northern and the Grand Trunk Pacific companies for possibly a nominal consideration, or, having regard to the magnitude of the scheme, for a comparatively small sum. The Dominion to take over all the assets and assume all the liabilities of the Canadian Northern and the Grand Trunk Pacific systems and to guarantee interest on their bonds and debenture stock—supplemental to and not in cancellation of existing provincial and other guarantees of such securities.

"The Dominion to lease the C.P.R. system in perpetuity for a rental equivalent to an agreed annual return on its common stock and to guarantee the payment of all dividends or interest on all the securities of that system which are senior to its common stock, and to assume all the liabilities of that company, including all its guarantees on the securities of other railway companies, and the payment of all rentals for which the C.P.R. is responsible. The Dominion to take over all the assets of the C.P.R. Co., except those which are not closely connected with the operation of its railways and connections, which assets would be transferred to a separate company for the benefit of C.P.R. shareholders. These excluded assets would include: All lands, except those specified as "Surplus lands" in Schedule B of the company's annual report; interests in town sites; timber and mining rights; collieries and timber mills, improved farms and live stock; natural gas and petroleum rights; investments in Consolidated Mining and Smelting Co. and in West Kootenay Power and Light Co.; investments in coal and other mines; balance at credit of special income account; proceeds of land sales; deposits and loans; cash on hand and in banks, etc. in excess of current liabilities.

"The Dominion to lease the Grand Trunk system in perpetuity, for a yearly rental equivalent to certain rates of dividends per annum on its preference and common stocks to be agreed upon, and to guarantee the payment of all dividends or interest on all the securities of that system which are senior to its preference and common stock, and to assume all the liabilities of that company, including all its guarantees on the securities of other railway companies and the payment of all rentals for which the Grand Trunk Co. may be responsible. The Dominion to take over all the assets of the G.T.R.

"The five systems, viz., the existing government system, the Canadian Northern, the Grand Trunk Pacific and the Canadian Pacific and Grand Trunk systems to be administered for and on behalf of the Dominion, under an agreement with the Dominion, by a company to be known as the "Canadian Railways Co.," to be incorporated and constituted, as follows:

"The company to be incorporated as above to have a capital of, say, $10,000,000 and a board of directors of nine members; 51% of the capital to be subscribed and paid for and to be held by the Dominion, and the balance, 49%, to be subscribed and paid for and to be held exclusively by citizens of Canada. The Dominion to guarantee 5% per annum dividend on the Company's stock. Four of the nine directors to be appointed by the Governor General in Council, four by the citizen shareholders of the company, representing 49% of the stock, and the ninth director to be appointed by the Supreme Court of Canada. The directors appointed by the Governor General in Council and by the Supreme Court not to be interested directly or indirectly in the Company's stock. No corporation, firm, or individual to be interested directly or indirectly in more than 100 shares of the citizens' stock. No stock to be transferred without the board's consent. The directors appointed by the Governor General in Council to hold office, one for five years, one for 6 years, one for 7 years and the fourth for 8 years, and to be eligible for re-election—subject, however, to dismissal by the Governor General in Council in the event of misconduct or incapacity, with right of appeal in such case to the Supreme Court of Canada. These four directors to be the most capable railway administrators obtainable—one of them with experience in operating, one in traffic, one in finance and accounting, and the fourth in legal work. The directors appointed by the citizen shareholders to be elected annually. The director appointed by the Supreme Court to hold office for 10 years and to be eligible for reappointment, subject, however, to dismissal by the Governor General in Council in the event of misconduct or incapacity, with right of appeal in such case to the Supreme Court. Vacancies due to death or resignation to be filled by the Governor General in Council, in the case of a director originally appointed by him, in the case of a director appointed by the citizen shareholders by the other three similarly appointed directors until the next annual meeting of the company and by the Supreme Court in the case of the director appointed by it. The chairman and vice chairman of the company to be appointed by the Governor General in Council from among the four directors similarly appointed and to hold office for eight and seven years, respectively. The chairman to be the chief executive officer of the company. The vice-chairman to assist the chairman and to represent him in his absence. The salaries of the members of the board of directors appointed by the Governor General in Council to be sufficient to secure the best men for the positions and the salaries of the other directors to be such as to make it worth the while of able and reliable men to become members of the board. The board to control and direct the company's policy and to have complete control of the ap-

pointment work of the company's officers and employes. In any year in which the net revenue of the whole system is sufficient to pay all the rentals and other charges payable by the Dominion in respect of the whole system, including interest at an agreed rate on the amount invested in the existing Government system and the interest payable on additional capital expenditure, the chairman and vice-chairman and other members of the board shall receive a bonus equivalent to an agreed percentage of their respective annual salaries and the citizen shareholders an agreed increase in their dividend, and in the event of the net revenue exceeding the said fixed charges in any year by a percentage to be fixed, the said members of the board shall receive an additional bonus equivalent to an agreed percentage of their respective salaries, and the citizen shareholders shall receive an agreed additional increase in their dividend for that year. Maximum salaries for the respective directors and a maximum dividend for the shareholders to be fixed.

"The Dominion to finance the whole system including the provision of the funds for new railways, for all additions and improvements to existing lines and for rolling stock and other equipment chargeable to capital account, as may be stated to be required by the board. In the event of a difference of opinion between the board and the Minister of Railways (representing the Dominion) in respect of any of such capital account requirement, the question to be submitted to the authority referred to in the next clause for investigation and report—the decision of such authority to be final.

The construction of a new railway not to be undertaken nor any commitment to it given until an investigation and report in regard to it have been made and the report laid on the table of the House of Commons by a competent authority—independent of politics—say, a board of three members thoroughly well qualified for the purpose.

Rates and fares and other charges for transportation and other services not to be increased without the approval of the Dominion Board of Railway Commissioners.

Except as specified in the next clause rates and fares and other charges not to be reduced without the consent of the board until a substantial reserve guarantee fund has been provided out of net revenue (in excess of the fixed charges, bonuses to directors and extra dividends to shareholders) and the net revenue has been sufficient in three successive years to pay all such fixed charges, bonuses to directors and extra dividends to shareholders, and then only to the extent which, based on the average traffic of the said three years, shall represent a reduction in the net revenue equal to the net revenue in excess of the said fixed charges, bonuses and extra dividends.

The Dominion may by order in council declare a matter (such as a reduction in transportation or other charges for services rendered or the construction of a new railway) to be one of general policy, and direct the board to give effect to such policy, but in the event of the board not concurring in whole or in part in such direction, the Dominion shall reimburse annually to the whole system 75% of the yearly increase in expenditure or of the decrease in revenue of the whole system occasioned by the carrying out of such direction in excess of such increase or decrease as would have been occasioned by the carrying out of such direction to the extent only to which the board concurred in it.

"The company's accounts and books to be continuously audited by an auditor to be appointed by the Governor General in Council, who shall certify to the balance sheet, profit and loss account and other annual statements of the company."

The Canadian Pacific Railway's Honor Roll No. 19.

Adams, Percy Miller	Clerk	Lambton	Wounded
Allan, William E	Waiter	Fort William	Died of wounds
Andrews, Harry	Clerk	B.C. Lake Steamers	Killed in action
Baikie, David	Laborer	Fort William	Wounded
Baird, John Pollock	Stenographer	Saskatoon	Wounded
Barton, George	Clerk	Glen Yard	Wounded
Bell, William	Conductor	Victoria	Shell shock
Bigney, Charles W. S.	Deckhand	British Columbia Dist.	Wounded
Blight, Gerald	Concrete inspector	Calgary	Wounded
Bonsfield, Frederick P.	Cook	Winnipeg	Killed in action
Bottaro, Peter	Porter	Calgary	Wounded
Bovet, Frederick	Trainman	Winnipeg	Wounded
Brooksbank, Jack	Deckhand	Moose Jaw	Wounded
Buck, Frederick M.	Wiper	Woodstock	Wounded
Burleigh, Howard M.	Assistant agent	Calgary	Shell shock
Burrell, William A.	Clerk	McAdam	Wounded
Campbell, Thomas	Brakeman	Ibsen	Wounded
Causton, James W.	Operator	Ogden Shops	Wounded
Clark, George	Trainman	Sutherland	Wounded
Cockerill, John	Locomotive fireman	Strathmore	Died of wounds
Cole, John	Wiper	British Columbia Dist.	Wounded
Cook, Leonard H.	Laborer	Smiths Falls	Wounded
Cooper, William	Locomotive fireman	Winnipeg	Wounded
Corrigan, Albert	Red-cap porter	Revelstoke	Wounded
Crabbe, James	Ass't baggagemaster	Montreal	Wounded
Crone, John	Laborer	Fort William	Wounded
Dagnall, George	Checker	Sedgewick	Wounded
Daley, Barry	Deckhand	Winnipeg	Wounded
Darby, Frank Leslie	Laborer	Port Arthur	Wounded
Dazley, Herbert C.	Elevator operator	Moose Jaw	Wounded
Dewar, Patrick S.	Steam fitter's helper	B.C. Lake Steamers	Killed in action
Drake, Robert Ludlow	Commissary Agent	Brooks	Wounded
Edward, Alexander	Locomotive man	Vancouver	Wounded
Evans, George Oscar	Baggage porter	Calgary	Killed in action
Evans, Gilbert Ansdell	Carpenter	British Columbia Dist.	Killed in action
Evans, William	Waiter	B.C. Lake Steamers	Wounded
Faulkner, William	Waiter	East Calgary	Killed in action
Gardner, Alfred Henry	Clerk	Lauder	Wounded
George, Ernest Frederick	Clerk	Kenora	Died whilst prisoner of war
Gillies, John Nimmo	Brakeman	Moose Jaw	Believed killed
Gleeson, Stanley	Clerk	Toronto	Wounded
Govier, James Charles	Sectionman	Manitoba District	Died of wounds
Green, Sidney	Stripper	Brandon	Killed in action
Haggan, Homer	Laborer	Coquitlam	Wounded
Hall, George	Draughtsman	Fort William	Wounded
Handyside, Richard	Watchman	Ottawa	Wounded
Harding, William S.	Clerk	Winnipeg	Wounded
Hartshorn, Robert	Section foreman	Medicine Hat	Wounded
Hearn, Arthur F.	Car cleaner	Moose Jaw	Killed in action
Henderson, Wililam A.	Wiper	Fort William	Wounded
Hewitt, Henry	Boilermaker	Calgary	Wounded and missing
Holmes, Alfred Travis	Agent	Red Deer	Wounded
Howlett, Horace B.	Checker	Fort William	Killed in action
Hutson, Thomas L.	Apprentice	Calgary	Wounded
Ince, Lester Edgar	Sleeping car porter	Montreal	Shell shock
Jaycock, William G.	Locomotive fireman	Lethbridge	Gassed
Jones, David E.	Apprentice	Angus	Wounded
Ker, Edward Dickson	Clerk	Vancouver	Wounded
Lapworth, George T.	Locomotive fireman	Kenora	Wounded
Larbalestier, Bernard	Clerk	Calgary	Died of wounds
Law, Robert	Apprentice	Ogden Shops	Wounded
Leitch, Joseph a	Locomotive fireman	Calgary	Wounded
Lloyd, Stanley	Messenger	Winnipeg	Wounded
McCarthy, Sidney	Wiper	Arcola	Shell shock
McDougall, David L.	Brakeman	Medicine Hat	Wounded
McIntosh, Norman	Locomotive fireman	Sutherland	Died of wounds
McLean, Dugald	Waiter	Calgary	Wounded
Malcolm, John Croll	Fitter's helper	Cranbrook	Killed in action
Martin, John Byron	Lineman	Revelstoke	Wounded
Melbourne, Arthur	Helper	Moose Jaw	Wounded
Moore, Charles	Heater man	Angus	Killed in action
Moor, Roland T. H.	Stenographer	Saskatoon	Died of wounds
Mountain, Arthur J.	Brakeman	Calgary	Believed killed
Murary, John	Bell Boy	Victoria	Wounded
Odam, Ernest	Stationary fireman	Kenora	Wounded
Phillips, Percy W.	Miner	Calgary	Wounded
Preston, Samuel	Laborer	Parkland	Wounded
Riches, Frank	Locomotive fireman	Minnedosa	Wounded
Roberts, John	Locomotive fireman	East Calgary	Wounded
Roerick, Raoul G.	Cook	Calgary	Wounded
Rushworth, George	Car repairer	Winnipeg	Died of wounds
Sanger, Herbert G.	Furnace helper	Angus	Wounded
Seright, James	Boilerwasher	Calgary	Wounded
Short, William W.	Clerk	Edmonton	Killed in action
Sinclair, William	Locomotive fireman	Minnedosa	Killed in action
Sissons, Franklin T. M.	Cashier	Edmonton	Wounded and prisoner
Sparks, Ernest	Locomotive man	Minnedosa	Killed in action
Spencer, Willard M.	Trainman	Moose Jaw	Died of wounds
Stevenson, David	Clerk	Winnipeg	Wounded
Stone, Edward Wilfred	Apprentice	Ogden Shops	Died of wounds
Taggart, William J.	Conductor	Brandon	Wounded
Tarrant, Samuel	Fitter's helper	Lambton	Killed in action
Tout, Walter	Checker	Moose Jaw	Wounded
Unwin, Henry Wallace	Conductor	Chapleau	Killed in action
Walls, Nixon	Blacksmith's helper	Ogden Shops	Wounded
Walton, Joel	Clerk	Montreal	Shell shock
Watson, Leon A.	Lineman	Nelson	Wounded
White, Frederick S.	Hostler	Assiniboia	Wounded
White, John Robert G.	Leveller	Brooks	Shell shock
Willlams, George G.	Clerk	Regina	Wounded
Willlamson, Nelson S.	Apprentice	Winnipeg	Wounded and prisoner
Willoughby, William	Teamster	Calgary	Killed in action
Wood, George	Storeman	Glen Yard	Wounded
Young, Percy R.	Call boy	Moose Jaw	Wounded

Increases in Lake and Rail Rates from Eastern Canada to Fort William, Etc. Sustained by Board of Railway Commissioners.

The Assistant Chief Railway Commissioner, D'Arcy Scott, gave the following judgment, Mar. 29:

The Montreal Board of Trade has brought to the board's attention the tariffs filed by the railway companies increasing the lake and rail rates on sugar to Fort William and other lake points, effective April 2. The G.T.R., the C.P.R., and the Canadian Northern Ry. were called upon to justify the proposed increases at the sittings of the board at Ottawa on Mar. 20. At the hearing, in addition to the railway companies mentioned, the Montreal Board of Trade, the Toronto Board of Trade and the Canadian Manufacturers' Association were represented. After the question of increased rates on sugar had been gone into at the hearing it appeared that a number of other commodity rates, as well as the class rates, which had also been increased, were in the same position as the sugar rates. Therefore, whatever justification there might be for increasing sugar rates would apply to the other rates covered by the same tariffs.

In dealing with the tariffs I will refer only to those of the C.P.R. The other railways have filed tariffs practically similar to the C.P.R. ones. The C.P.R. tariff containing the increases is Supplement 6 to C.R.C. no. E. 3136, issued Feb. 26, 1917, effective April 2, 1917. An examination of the different lake and rail rates that have from time to time been effective since the board's establishment will be of interest in connection with this matter. The following statement gives the lake and rail commodity and class rates to Port Arthur and Fort William, shown in all tariffs filed by the C.P.R. from 1904 to and including the tariff under consideration, the increases in which the company now seeks to justify:

To Port Arthur and Fort William. Lake and Rail.

	Rate per 100 lbs.
Aug. 1-04—Sup. 1-E 220—Spikes, bolts and nuts for railway construction—	
From Montreal	17½c
From Toronto	15c
June 20-10—Sup. 26. E-1107—	
From Montreal	17½c
From Welland, Toronto, London, Swansea, Hamilton	15c
Apr. 2-17—Sup. 6, E.3136—Same as iron and steel.	
From all points	22c
Aug. 1-04—Iron and steel articles—	
From Montreal and West	20c
Apr. 27-05—Sup. 2, E.220	25c
May 1-09—Sup. 19, E.1107	22c
May 22-16—E.3136	19½c
Apr. 2-17—Sup. 6, E.3136	22c
May 15-07—E-838—Plasterers' hair.	
From Berlin, Ont.	20c
Apr. 2-17—Sup. 6, E.3136—(Old 5th Class, 25c) cancelled, 5th class to apply	30c
May 2-05—Sup. 3, E.220—Salt, c.l.	
From Windsor, Wingham, Goderich	8 1/3c
Apr. 2-17—Sup. E.3136	11 2/3c
June 12-05—Sup. 5, E.220—Binder Twine.	
From Montreal and West	23½c
June 25-06—Sup. 3, E.635	19c
June 12-07—Sup. 3, E.838	20c
May 5-08—Sup. 1, E.1107	15½c
Apr. 2-17—Sup. 6, E.3136	17½c
May 22-16—E.3136—Cement c.l.	
From Dumfries, Durham, Hanover, St. Marys	10½c
From Hull, Montreal	14c
From Belleville	13c
Apr. 2-17—Sup. 6, E.3136—	
From all points	15c

May 22-16—E.3136—Brick linings, stove.	c.l.	l.c.l.
From St. Johns, P.Q.	28c	43c
Apr. 2-17—Sup. 6, E.3136 — Cancelled. Class rates to apply	39c	59c
Oct. 14-16—Sup. 3, E.3136—Stable fittings.		
From Guelph, Fergus	25c	
Apr. 2-17—Sup. 6, E.3136	27c	
May 22-16—E.3136—Earthenware, stoneware, l.c.l.		
Apr. 2—Sup. 6, E.3136—		
From Montreal, Belleville, Port Hope	38c	45c
From Toronto, Hamilton, London	31c	38c
May 1-09—Sup. 19, E.1107—Sugar, c.l.		
From Montreal	25c	
Apr. 2-17—Sup. 6, E.3136—		
From Montreal	35c	

Classes.

May 16-04—E.220—

Toronto and West—	1	2	3	4	5	6	7	8	9	10
	50	44	38	31	25	25	20	20	..	20
Montreal and West—	60	53	45	38	30	30	24	24	..	24

Apr. 2—Sup. 6, E.3136—

Toronto and West—	1	2	3	4	5	6	7	8	9	10
	60	53	45	38	30	28	21	21	..	21
Montreal and West—	70	61	53	45	35	35	24	24	..	24

While the earliest date given is the first record of the rate in tariffs filed with this board, I am told by the Board's Chief Traffic Officer, who had an intimate knowledge of lake and rail rates long before the establishment of the board, that many of these class rates are much older than the earliest tariffs on record with the board would indicate. These rates are from stations in Eastern Canada to Lake Huron and Bay ports by rail, thence by boat to Fort William and Port Arthur or other lake ports. The point of transshipment from rail to lake boats for the head of Lake Superior for the C.P.R. is Port McNicoll, on Georgian Bay, and for the G.T.R., Point Edward, at the south end of Lake Huron. The rail haul, from Montreal for instance, is in direct competition with the all water movement via the St. Lawrence River and Great Lakes.

The justification of the proposed increases submitted by the railway companies was that the rates sought to be increased were exceptionally low rates, put in to meet water competition, which the companies had the right to cancel or increase at any time they decided to disregard the water competition, and that conditions had so changed that the railway companies did not desire any longer to meet water competition. This position is quite tenable, and the principle involved has been recognized by the board in a number of cases. (See judgment of Commissioner McLean in Blind River Board of Trade v. G.T.R., C.P.R., Northern Navigation and Dominion Transportation Companies, 15 Canadian Railway Cases, pg. 146).

The board has no jurisdiction over the rates charged on the division of lake and rail rates demanded by the different steamship companies operating boats on the St. Lawrence or the Great Lakes, other than the rates on the steamers operated by the C.P.R. I understand the steamship companies desire to charge higher rates during the coming season than they have been charging in the past. The extraordinary demand for ocean tonnage, due to the war, has caused Canada Steamship Lines, the corporation which operates the largest number of boats on the lakes, to remove its largest and best lake boats and put them into ocean service. Doubtless, other lake boat owners have done the same thing. The result is a scarcity of tonnage on the lakes. With increased water rates and a scarcity of lake tonnage, it is only natural that the railway companies should decide that the present was an opportune time to cancel their old water compelled rates.

It should be borne in mind that at the time the increase in rates was allowed by the board in the Eastern Rates Case the lake and rail rates now under consideration were not increased. The rail portion of the proposed rates does not appear to be excessive, when compared with the local rail rates between the same points. The steamship divisions of the proposed rates are, I understand, to be the same percentages as have been in effect for a number of years. They appear in the judgment in the Blind River Case already referred to.

Local Rates to Point Edward.

	Per 100 lbs. 1st Class	5th Class
From Montreal	60c	30c
From Toronto	38c	19c

Railway Portion to Point Edward of Proposed Lake and Rail.

	Per 100 lbs. 1st Class	5th Class
From Montreal	42c	21c
From Toronto	25½c	12¾c

The Montreal and Toronto rates in the new tariffs are blanket rates, and, therefore, a comparison of the rail portion of these rates with the local class rates from points covered by the Montreal or Toronto lake and rail rates, but much nearer to the point of transshipment to the boats than either Montreal or Toronto, as the case may be, would not appear as favorable to the new rates as the example given above.

Nevertheless, Montreal and Toronto, being the two largest shipping points, the comparison given above is a fair one. The new lake and rail rates will so far as is known be the following number of cents over the maximum all water rates for the season of 1917 in the classes mentioned:

5c per 100 lb.—1st class.
4c per 100 lb.—2nd class.
4c per 100 lb.—3rd class.
3c per 100 lb.—4th class.
2c per 100 lb.—5th to 10th class inclusive.

And the proposed rates will be under the present all rail rates to Fort William 45c per 100 lb. 1st class, and 12c per 100 lb. 5th class from Toronto; and 35c 1st class and 7c 5th class from Montreal.

It should be understood that the only rates the board has had under consideration in this matter are the local lake and rail rates to Fort William and other lake ports and are to be found in tariffs becoming effective on April 2, 1917. As already indicated, the railway companies may in their discretion meet water competition if they see fit to do so and may also determine the extent to which they shall meet it, and, therefore, the board cannot interfere with the tariffs filed.

Northern Colonization Ry.—The act passed at the Quebec Legislature's last session respecting the land grant made to this company, provided for the ratification of letters patent dated July 31, 1916, granting lands to the company to replace the 96,000 acres granted by letters patent dated Sept. 30, 1910, and receded to the government July 28, 1916, for reasons set out in an order in council dated June 22, 1916. The reason for the re-ceding of the lands as set out in the documents, which are given as a schedule to the act, is the flooding of them by the damming of theh St. Maurice River under the Running Water Commission's direction.

Rapid Transit Railways.—E. V. Pannell, electrical engineer, read a paper on rapid transit railways some features of construction and cost, before the American Institute of Electrical Engineers, Toronto Section, Apr. 20.

Maximum Length of Trains on Canadian Railways.

Canadian Railway and Marine World for April contained a summary of a judgment given by Commissioner S. J. McLean of the Board of Railway Commissioners, on Mar. 24, on an application for an order to define the maximum length of trains to be hauled on Canadian railways. Following is the full text of the judgment:

The matter of the regulation of the length of freight trains was set down for hearing by the board of its own motion. At the hearing, certain points were set forth by the representatives of the organizations of railway employes as constituting the essence of their complaint. A written submission was subsequently made by the railways, and a written reply thereto was made by the representatives of the organizations of railway employes. Investigations have been made by the board's operating department of the practical working of long freight trains and the various factors involved.

The matter was taken up by the board at a time when the country was subject to war conditions; and the continuance of the war has every day emphasized the burden the war puts on Canadian transportation facilities and the necessity of obtaining the very highest possible efficiency from them. The condition which the country went through since last year and which, unfortunately, it is still in, further emphasizes the importance of obtaining the highest possible efficiency from rolling stock. This is necessary, not only if the war needs are to be met, but also if the ordinary commercial needs of the country are to be met. Conditions are such that it is impossible to add to the rolling stock at once. The question is to do the best with what there is. One index of the existing condition is the sanction given by the board to the curtailment of passenger service in order to facilitate the freight movement. With the termination of the war and the getting back to more normal conditions, the matter of the regulation of the length of long trains can and will be gone into on its merits. In the meantime, there is no other one thing more important in transportation than the movement of freight. The fundamental importance of getting the most efficient movement out of the rolling stock is patent to all. Its importance is especially apparent to those who in their daily work recognize the duty of ensuring such a freight movement as will enable that proper prosecution of the industries peculiarly relating to the war, and of the other and ordinary industries whose proper maintenance is essential to the prosecution and financing of the war. Under the existing conditions, the board is not justified in directing a revision of the length of freight trains.

The Napierville Junction Ry. Co. has been admitted to the Eastern Canadian Passenger Association's membership.

Snow Ploughs for Canadian Government Railways.

The accompanying illustrations show one of the 20 steel snow ploughs which were added to the Canadian Government Railways' equipment during the past winter. They have the following general dimensions:

Length, over all	32 ft. 1 9-16 in.
Width, over top sills	8 ft. 9⅛ in.
Height, rail to top of eaves angle	11 ft. 3 in.
Height, rail to top of cupola, about	14 ft. 10 in.
Width, over wings extended	16 ft.
Extreme width, cupola	8 ft. 9 in.
Extreme length, cupola	4 ft. 11⅛ in.
Truck centre	18 ft.
Wheel base, leader truck	4 ft. 2 in.
Wheel base, rear truck	5 ft. 3 in.

Snow Plough, Transcontinental Division, Canadian Government Railways.

Weight, approximately	60,700 lbs.
Draft gear	Tandem springs
Couplers	5 x 7 shank, 8½ in. end
Air brakes	Westinghouse, K.D. 812
Trucks (front end)	30-ton truck
Wheels	Cast steel, 28 in. diam.
Journal boxes	Tender type
Trucks (rear end)	30-ton standard
Wheels	M.C.B. 33 in.
Axles	M.C.B. standard
Brake shoes	Steel back
Springs	M.C.B. class
Brake beams	M.C.B.

These ploughs are practically duplicates of some built some little time ago for the Intercolonial Ry., except that the large draw bar castings on the front of the plough have been extended so as to facilitate the coupling of ploughs nose to nose. The ploughs previously built did not have this feature. In addition to this modification, the side wings were redesigned, and have curved plates, instead

of the straight plates previously used, in order that the ploughs will clear themselves more readily from the snow. The new ploughs also have an ice cutter applied to the front truck. These cutters are operated by air cylinders which remove the ice at the inside of the rails. The front operating device was changed, and instead of being lowered and raised by air, it is raised by means of levers and springs. The ploughs were built by the Canadian Car & Foundry Co.

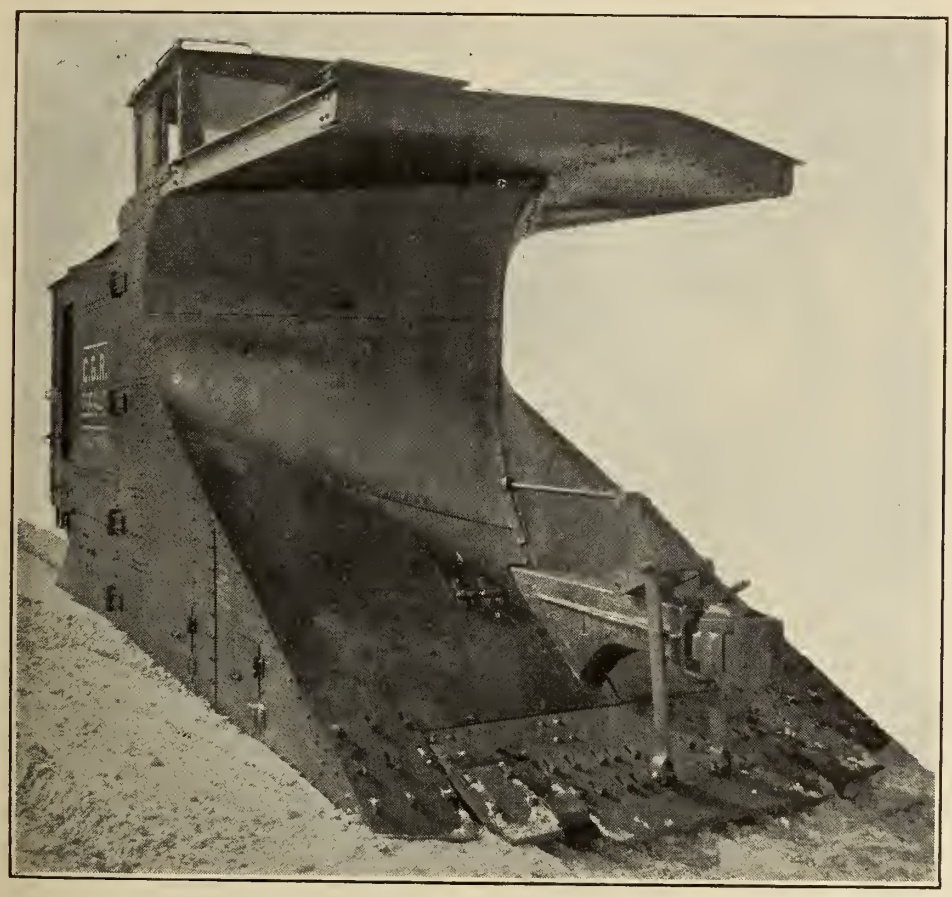
Application for Authority to Raise Freight and Passenger Rates.

Canadian railways are applying to the Board of Railway Commissioners for a general increase in freight and passenger rates. Permission is asked to make brief supplements to existing tariffs, authorizing an advance of 15% on all class and commodity freight rates, except on coal, and also on all passenger fares. A specific increase of 15c a ton on both bituminous and anthracite coal is requested, such advances to become effective upon less than 30 days notice. The grounds upon which this application are made are set forth as follows:

"Nothing is more essential to the welfare of Canada, whether considered in its own interests or as a part of the Empire, than that the railways operating within its borders should be in a position to respond immediately and effectively to the fullest demands made upon them, either by the general commerce of the country or in connection with the defence of the realm. Every industry, whether engaged in war preparation or in the manufacture of commercial commodities, and every individual in Canada, is affected either directly or indirectly by the efficiency or inefficiency of transportation facilities, and while at present, owing to scarcity in skilled labor and other causes due to the war, it may not be possible to maintain the transportation service in a condition of highest efficiency, it is an imperative duty on the part of everyone to see that the service is adequately sustained.

"The applicants claim that under the present revenues and rates applicable to their enterprises it is impossible to adequately sustain their service, to make needed betterments, or to meet the enormous decrease in net operating income attributable to the very substantial increased cost of fuel coal, materials, supplies, equipment of all kinds and wages, entering into the maintenance and operation of their railways. Since the rates of the railway companies are absolutely fixed under the Railway Act, the applicants are powerless to increase their revenues, to equalize or even to approach the equalization of this increased cost in fuel coal and other commodities, and they are faced with a probable deficit in net operating income unless immediate relief is granted. Substantial increases in both freight and passenger rates are therefore imperatively necessary, and the emergency requires that the relief granted should be made in the most expeditious manner and with the least possible delay.

"If advances in rates be proposed and filed with the board, in compliance with its present rules governing the publication of tariffs, a long delay must necessarily ensue before such tariff publication can be prepared and made effective, and for these reasons it is deemed expedient that any advance permitted should be made by virtue of the War Measures Act and that the board upon the passage of any order in council as may be recommended by the board should permit the publication of flat percentage advances to existing tariffs by supplementary tariffs filed with the board, and that such supplementary tariffs should be published and made effective at the earliest possible moment. Even should these advances be authorized, the increased revenues which the applicants will receive therefrom will not be sufficient to meet the additional outlay which they will be called upon to make in the purchase of the amount of one article—coal—used yearly by the applicants in Canada."



Snow Plough, Transcontinental Division, Canadian Government Railways.

The railways are submitting with their application details of the great increases in railway operating expenses due to the rise in the price of fuel coal and other commodities, increased duties, war taxes and labor payments. Fuel coal alone will cost Canadian railways several million dollars more this year than in 1916. The consumption of coal by the Canadian roads is approximately 25,000 tons a day, or more than 9,000,000 tons a year. For this coal the railways will have to pay, during the next twelve months, a much higher price than at any time in their history. The railway coal contracts with the mines run from April to April, and new agreements just entered into call for an increase in price of about 100%. In addition to the high purchase price, the Canadian railways have to pay a customs duty of 55c a ton on locomotive fuel entering Canada, and a 7½% surtax as part of the War Revenue Act of 1915. With the doubling up in the price of coal, this surtax will automatically increase and prove a heavy additional burden. The railways also use millions of dollars worth of other products, the prices of which are steadily mounting. The price of locomotives has increased 90%, freight and passenger cars 50%, and rails $10 a ton. Since the beginning of the war the railway pay rolls have shown marked advances. There has been a general increase in the wage scale and large expenditures on additional labor have been necessary to maintain efficiency, with many thousands of skilled employes enlisting and others engaging in commercial pursuits, where opportunities are considered larger and more profitable, as a result of the great activity and prosperous conditions in the business world.

Evidence will be presented to the Board of Railway Commissioners to prove beyond doubt that the railways cannot meet the pressure on their revenues resulting from these greater costs. Canadian railway officials state that a reasonable increase in freight rates would not in any way burden the community, but would in reality prove a national economy, in that it will assist the nation's business demands, and which would not otherwise be possible. The railways take the ground that they are the only concerns in the industrial world that are at present selling their product at the old rates, and at the same time paying more for everything they buy than they ever did before. The new and unexampled conditions, particularly in regard to the price of fuel, now existing make the wiping out of the favorable revenue showings made last year a certainty, if increased rates are not promptly granted, and a refusal of such an increase would, the railway executives state, cripple the railways. United States railways will place new tariffs in effect from June 1 next, by the Interstate Commerce Commission's authority, given recently. The conditions of railway operation on both sides of the international boundary line are similar, except that the Canadian lines must meet the heavy duty on fuel and other supplies used.

The Cost of Railways in Eastern Canada and their Earnings.

By Sir Henry L. Drayton, K.C., Chief Railway Commissioner of Canada.

The following is taken from the judgment in the Eastern Rates Case, given by Sir Henry L. Drayton a short time ago and the decisions arrived at which were given in Canadian Railway and Marine World at the time:—

Speaking generally, there are three lines of railway, subject to the Board of Railways Commissioners' jurisdiction, operating in Eastern Canada. Of course, there are a good many other railways operating, but their activities are not of such an extent as to render them necessary to be considered in the large in this case. The Canadian Northern System has only emerged from the construction state, and its figures need not be considered. Its position is shortly stated by the company to be that they need every cent of revenue that they can obtain. There is little reason to doubt that the Canadian Northern is operating in Eastern Canada at a loss. There remains to be considered the figures of the Canadian Pacific and Grand Trunk Railway Companies.

Some shippers have claimed that, with the Canadian Pacific still making a proper and sufficient return, no increase in rates can be justified. As it occurs to me, the mere fact that the Canadian Pacific, as a result in part, as it may be, of its steamship operations, pays a good return to its shareholders, raises no argument one way or the other as to the reasonableness of freight rates in a given territory in which that company operates. The reasonableness of the return earned by the company on freight carried in Eastern Canada does not depend one way or another on profits and losses resulting from operations elsewhere. This company's divisions in Eastern Canada are the Atlantic, Eastern, Ontario and Lake Superior. These divisions, of course, include a territory a good deal larger than the territory served by the Grand Trunk in its Canadian operations.

The Atlantic Division includes all the lines between St. John in the east and Megantic, Que.—a territory in which the Grand Trunk has no tracks, while the Lake Superior Division extends to Port Arthur, 628 miles west of North Bay, the Grand Trunk's most northwesterly point. The Ontario Division carries the Canadian Pacific as far west as Windsor on the south and Chalk River on the north. There is but little local business on the Lake Superior Division, that portion of the system having been applicably termed a bridge between Eastern and Western Canada. The district carries, however, a considerable tonnage, with gross traffic returns in 1913 of $10,141,496, dropping in 1914 to $8,130,475. In the same two years the gross earnings on the Atlantic Division amounted to $2,336,002 and $2,297,485, respectively. Speaking generally, the Atlantic Division is operated at a loss, the operating ratio running from 98.7 in 1909 to 110.3 in 1912. This ratio, of course, just simply means the expenses incident to earning $1 of revenue, with the result that in the first instance the company netted over and above its operating expenses 1.3 c. and in the next instance was out of pocket 10.3 c. for each dollar that it took in. In so far as the Atlantic Division is concerned, if the Canadian Pacific's figures were to be accepted throughout, a prima facie case is made out for very radical advances in all rates. The districts most fairly comparable to the Grand Trunk System are the Eastern and Ontario Divisions. The gross freight earnings of the Canadian Pacific in these districts are considerably lower than those of the Grand Trunk, the Grand Trunk's gross freight revenue in Canada for 1909 being $18,755,809, while the Canadian Pacific's gross earnings in Eastearn and Ontario Divisions were $11,325,-562; and for 1913, $27,552,505 as against $17,448,481. Stated in other words the Canadian Pacific's gross earnings in these divisions are but little over three-fifths of those of the Grand Trunk. The freight earnings of the Canadian Pacific on these divisions for 1913 constitute merely 20% of its total freight revenues. Taking, however, the whole freight earnings of the Canadian Pacific, Port Arthur east, and comparing them with the earnings of the Grand Trunk in Canada from the years 1909 to 1914 inclusive, the following is the result:—

Year	G.T.R.	C.P.R.
1909	$18,755,809.00	$17,865,780.00
1910	21,399,003.00	20,861,825.00
1911	22,091,749.00	23,092,931.00
1912	24,082,910.00	27,905,169.00
1913	27,552,505.00	29,925,980.00
1914	26,134,717.00	27,079,389.00

During the whole period, if the gross earnings on the Atlantic Division (which were attended by no proper return at all and therefore only weighed down the general net figures) were deducted, the result is, with the exception of the year 1912, that the Grand Trunk returns are the greater. The Grand Trunk was a line primarily built for the necessities of Eastern Canada. It runs into all the large producing centres; it has a well established and well worked up business; and in the territory where the vast majority of the rates in review are in question, does the largest business and obtains the greatest earnings. There can be no question, in so far as Eastern Canada is concerned, that any injustice could possibly be done the shipper in accepting for primary consideration the actual results of the Grand Trunk's earnings as a basis of rates.

Mr. Walsh, of the Canadian Manufacturers Association, as well as others, who appeared in opposition to the railway's proposals, objected to any attempt at realignment of rates based upon the capital cost of that line as carried on the company's books, and as returned by the Government. The return to the Government shows capital charges consisting of common and preferred stock and bonds, amounting to no less than $131,395 per mile of line. The objection is, of course, perfectly well taken. It would be impracticable to attempt in the first instance to put in effect any such rate basis and expect traffic to move under it.

The Grand Trunk is, as railways go, an old system. Many mistakes were of necessity made at its inception, and much reconstruction has taken place; and it would appear that no system, or at least no sufficient system, of depreciation has been followed to insure a fair physical representation on the books, and that while much money from time to time has undoubtedly been expended and properly expended, a proportion which cannot now very well be determined should not in any sense have been treated as new capital, but as a replacement of former values. The line was, of course constructed through a well settled part of the country, and in districts where the purchaseable right of way today would undoubtedly be expensive.

Probably, however, one of the most expensive sections of railway built in the whole of Eastern Canada is the Canadian Pacific cut-off line from Glen Tay to Agincourt, the right of way in this instance being purchased only recently and at a high and disproportionate cost to rights of way in other rural sections. The construction, however, of this line, expensive as it was, amounted to only $13,174,658, with a resultant cost per mile of $71,547, while the line built by the same railway from Toronto to Sudbury cost but $56,689 a mile. Much of the construction in this case was also through a well settled part of Ontario where high farm values would govern. It must, however, be noted that construction in both these includes no terminals at either end, and, of course, does not include any allowance for rolling stock. Both lines, however, are built to a high standard and are considered efficient avenues of transportation.

The Government statistics of 1915 give the cost figures for the recently completed National Transcontinental and the Intercolonial. The Intercolonial's cost amounts to $75,066 a mile. This cost, however, appears to include equipment and terminals. The cost of the National Transcontinental is shown at $76,632 a mile, and does not include equipment.

Objection can well be raised by the Grand Trunk that it is entirely unfair to compare the cost of a right of way, much of which runs through farms well cultivated and with a heavy acreage value, with the cost of a right of way in Northern Ontario and in an undeveloped district. No such criticism, however, can be raised at all as against the Canadian Pacific's cut-off. The only criticism that could be offered as to the cost of that line being an eminently fair basis of value to the railways, lies in the fact that no terminal costs are included therein. Unfortunately, an examination of the company's books establishes the fact that it is impossible to arrive at what sum the Grand Trunk terminals have cost them. The capital account has not been kept in such a way as to distinguish such capital items.

During the inquiry, among other information which the company was required to furnish the Board, it was asked at what sum its trackage stood on the company's books. The answer given was that the capital account at Dec. 21, 1914, as shown in the annual report as account 4, amounted to £85,481,785, 2s. 5d., and that no separation had been made between the road and the equipment. It was also asked as to the value placed on its terminals, which are of course expensive, in Montreal, Toronto, and Hamilton; and the system in which the company's books were kept in this regard. The answer was that no separate records were kept. A valuation was made by the company showing the value of Montreal terminals for freight service, together with a proper proportion which should be charged for facilities common both to the freight and passenger service, which amounted to $23,036,910, while at Toronto a like valuation amounted to

$8,785,203; and the company also returned the cost of the equipment in service June 30, 1914, at $54,897,037.62.

Perhaps the most recent estimate as to the cost of railway construction is that made by the Hydro-Electric Power Commission of Ontario, a cost which ran at approximately $100,000 a mile of line, the estimated value being put at $13,374,155 for a line 138 miles in length between Toronto and London. This cost, however, includes terminals and equipment. The Grand Trunk's returned cost of $131,395 cannot, therefore, be sustained by the standard of any other line either built or projected.

In so far as returns in rates are concerned, it is, of course, necessary to consider not only the mileage owned by the company and represented by its capital stock and which the Government statistics return (table 3) as 3,326.67 miles of main line, but also the lines leased or operated under contract or trackage rights, making a total mileage of 3,560.00 miles. The same table shows, in connection with the Grand Trunk, 731.38 miles of second track operated. The evidence also shows the company as having 1,339.42 miles of sidings and yard tracks. Accepting, however, for the purpose of comparison, the revenue mileage as being 3,560.60 miles, the net earnings per mile of line of the Grand Trunk available for capital purposes are as follows—(the exact mileages varying slightly from year to year, but for the purposes of comparison the mileages of 1915 is adopted):—

Year.	Total Net Earnings.	Net Earnings Per Mile of Line.
1909	$8,805,589.78	$2,473.06
1910	9,175,376.88	2,576.92
1911	9,869,051.64	2,771.73
1912	10,914,365.20	3,065.31
1913	12,572,932.12	3,531.12
1914	10,892,131.33	3,059.35
1915	8,822,136.06	2,477.71

Not only Mr. Walsh, but others in opposition to the application, made the further objection that the Grand Trunk capital account included not only railways constructed in Canada, but also railways constructed in the United States, either owned or leased by the parent company, and large deductions of course were from time to time made; and that, so far as Canadian rates are concerned, they should be considered on their own basis apart from the losses of the part of the system in the United States. The further objection was made that the same capital covered advances to or investments in the Grand Trunk Pacific; and it became necessary for the Board to make an investigation into the company's books, having particular regard to this last question. The Grand Trunk has in fact a large investment in the Pacific line; an investment which freight rates in Eastern Canada should not be called upon to support. It is necessary to consider the period from 1906 to accurately ascertain how the matter stands on this issue. An examination discloses the fact that these advances have not been made out of earnings, but from capital account. Since 1906, the Grand Trunk has added no less than $99,567,908 to that account. The subjoined statement shows the particulars of the issues. So far as the column containing entries of expenditures on capital account of the company proper is concerned, it is not necessary, for the purposes of the present inquiry to examine such expenditures in detail, and to pass upon the issue as to whether or not some items should not be so included. It will be noted that, with the exception of the years 1909 and 1914, the issue on capital account each year left a balance available for other purposes, after all Grand Trunk expenditures proper were made, more than sufficient to provide for Grand Trunk Pacific expenditures. In the years 1909 and 1914 advances were not made by the Grand Trunk to the Pacific, but, on the other hand, balances owing by the Pacific to the Grand Trunk were reduced, as indicated by the asterisks:—

	Guaranteed Stock Sold.	Debenture Stock Sold.	Notes Sold.	Total.	Expended on Capital.	Balance available for other purposes.
1906	$5,489,600	$1,037,768	.....	$6,527,368	$ 583,284	$5,944,084
1907	2,818,350	2,298,770	.....	5,117,120	3,526,585	1,590,535
1908	5,370,771	730,000	.....	6,100,771	1,645,256	4,455,515
1909	.....	1,216,666	.....	1,216,666	2,754,866	*1,538,200
1910	3,406,666	4,868,473	.....	8,275,139	2,545,773	5,729,366
1911	6,329,314	8,030,000	.....	14,359,314	6,582,065	7,797,249
1912	1,825,000	16,305,766	.....	18,130,766	13,074,451	5,056,315
1913	1,384,301	4,389,188	9,733,333	15,506,822	14,998,586	508,236
1914	.....	7,300,609	.....	7,300,609	7,312,594	*11,985
1915	.....	.....	17,033,333	17,033,333	2,879,728	14,153,605
Total	$26,624,602	$46,177,240	26,766,666	99,567,908	55,883,188	43,684,720

The transactions of the Grand Trunk Pacific may be divided into three heads:—Grand Trunk Railway proper, Grand Trunk Pacific Branch Lines, and Grand Trunk Pacific Development Co. The following statement covers the same period as that covered by the above statement of capital account and gives the balance between the Grand Trunk and these different companies, the amounts indicated by asterisks being in favour of the Grand Trunk Pacific:—

Balance at December 31.	Grand Trunk Pacific Branch Lines.	Grand Trunk Pacific Railway.	Grand Trunk Pacific Development Company.
1906	$ 56,637	$ 3,210,589	$ 378,204
1907	64,301	3,521,706	163,749
1908	.....	10,821,495	.....
1909	*44,427	3,207,777	.....
1910	1,305,145	5,710,818	.....
1911	3,320,121	5,982,537	.....
1912	4,850,655	8,795,889	3,464,222
1913	6,038,460	6,228,239	6,130,114
1914	11,588,574	*4,337,190	9,035,722
1915	13,045,556	3,575,483	11,073,960

The result is that $43,684,720 of capital was available for purposes other than those of the Grand Trunk Co. of Canada proper, and that out of this sum there was advanced to the Grand Trunk Pacific undertaking, and remained there as of date Dec. 31, 1915, balances as follows:—

By the Grand Trunk Pacific	$ 3,575,483.00
By the Grand Trunk Pacific Branch Lines	13,045,556.00
By the Grand Trunk Pacific Development Company	11,073,960.00
Total	$27,694,999.00

The Board can, of course, give no consideration in the present case to these outside investments as having any bearing on the question of what freight rates ought to be. Under the caption of securities the company's books have the following items showing transactions from 1882 to 1914, exclusive of Grand Trunk Pacific items:—

Securities.	Cost.
Wellington, Grey and Bruce bonds.	$ 1,388,610.87
Chicago and Grand Trunk Junction bonds	4,464,684.36
Chicago and Grand Trunk Junction indebtedness	1,559,031.80
Grand Trunk Junction bonds	3,139,394.21
St. Clair Tunnel bonds	2,982,041.88
Michigan Air Line bonds	1,592,027.80
Midland sectional and consolidated bonds	3,122,837.72
Midland Railway bonds act, 1890..	22,416.40
G. T. and Georgian Bay and Lake Erie bonds	535,907.60
D. G. H. and M. Railway bonds	414,461.88
D. G. H. and M. indebtedness	735,226.21
Peterborough and Chemong Ry. bonds	67,958.13
Montreal and Lake Champlain Ry. bonds	371,117.40
Northern and Pacific Ry. bonds	2,444,088.67
Lake Simcoe, etc., bonds and shares	87,580.53
North Simcoe Ry. bonds	324,300.07
Detroit Line bonds	1,046,820.00
Detroit and Port Huron bonds	6,326.67
Brantford, Norfolk and Port Burwell bonds	123,126.67
Detroit Line shares	138,575.90
C. and G. T. Junction shares	24,518.27
Detroit and Port Huron shares	347,966.67
D. G. H. and M. equipment bonds	12,195.87
" consolidated bonds	22,216.34
" Mowatt mortgage	139,050.40
Grand Trunk Western first mortgage bonds	7,568,934.69
Ottawa Terminal Ry. bonds	3,000,000.00
Lachine, Jacques Cartier and Maisonneuve Ry. note	1,035,661.52
North Western Grand Trunk bonds.	5,572.33
Montreal and Southern Counties note	443,954.75
	$37,366,606.11
Less—G. T. W. second mortgage bonds retired	631,975.00
Total	$36,734,631.11

Of these expenditures it may be said that approximately $18,000,000 represent investments made for purposes other than transportation in Eastern Canada, making with the Grand Trunk Pacific different investments a total of $45,694,999.

On the question raised as to deficits on the Grand Trunk lines in the United States, Mr. Tilley argued that the Chicago connection was a statutory obligation imposed upon the railway company. His submission in this issue is as follows: "And in addition to that it must be borne in mind that the connection with Chicago by the Grand Trunk was a statutory obligation imposed upon the railway company. In 1879, the Grand Trunk was authorized to transfer to the Government of Canada the line between Hadlow and Riviere-du-Loup, 24.50 miles for $1,500,000. An agreement was entered into dated July 17, 1879, between the Government and Grand Trunk, by which this line was sold to the Government for that sum, and it was provided that the payment of the purchase money should only be made to cover expenditure for such purposes in connection with the Grand Trunk Railway as the Government should consider conducive to the public advantage, and that interest at 6% per annum should be allowed on any purchase money remaining unpaid. Then sec. 5 of the statute provided: That amongst the purposes which the Government considered will promote the interests of the Dominion is the extension, either by the building or purchase of an independent line, or by such other arrangements of a permanent character with other companies as will secure free access to and from Chicago, in the State of Illinois, for the through traffic of the Company. And the Minister of Railways and Canals may, by authority of the Governor in Council, make advances to the Company from the sum agreed to be paid for the said line at such times and in such amounts as in his opinion may be necessary to enable the Company to complete the arrangements contemplated in this section.' Thereafter in the years 1879 and 1880, steps were apparently taken by the Grand Trunk to acquire the various lines be-

tween Port Huron and Chicago, the various companies being consolidated under the name of The Chicago and Grand Trunk Railway Company. In 1900, this company defaulted in the principal of its first mortgage bonds, and being sold under foreclosure proceedings was finally acquired by the company which had been formed under the name of The Grand Trunk Western Railway Company. All the stock of this company is held by the Grand Trunk Railway Company of Canada."

Chapter 8 of the statutes of 1880 merely confirms the agreement Mr. Tilley refers to. Paragraph 5 of the agreement contains the only reference to this Chicago connection. The effect of the agreeis that the Government recognizes the propriety of the Grand Trunk applying its funds for either building or purchasing railways in the United States for the purposes of this connection. Any question which might arise as to the power of the company to make such investment as far as Canadian authority is concerned is set at rest by the Government's action, confirmed as it is by Parliament. The matter, however, is not carried further. Obligations to construct or purchase, statutory or otherwise, there are none. Certainly the result of the legislation and the agreement is not to render the Canadian shipper subject to the burden of making good losses in United States territory, or to justify higher rates in Canada than those which should obtain had the company's operations been confined to Canada.

Mr. Tilley further argued that the lines, although accompanied with loss, having regard to that portion of the through rates earned in the United States, were, nevertheless, of great value to the Company, and that the earnings on American freight, which otherwise would not have been carried by the Grand Trunk, more than offset the loss in United States territory.

A statement was made by Mr. Dalrymple, Vice President of the Grand Trunk, that these earnings would exceed $4,000,000. This statement was but an estimate, and no details have been filed, although requested, the company stating that an exact statement cannot at the present time be obtained. In the report of the company's directors for the half year ended June 30, 1895, a division, however, was made. That statement shows that in the corresponding half year of 1894, 1,210,077 tons of through American freight were carried by the company, constituting a percentage of 31% of its total tonnage for that period, and that in 1895, 1,113,343 tons of American freight were carried, constituting 28% of the total freight business. The report of the half year ended Dec. 31, 1895, gives the American tonnage for the six months ended Dec., 1894, as 1,250,250; and for the same period in 1895 as 1,277,570, with percentages to the total freight business of 30% and 28% respectively. Subsequent reports do not contain similar information. In the report of the directors of 1894, paragraph 28 reads:—"But the value of the Chicago and Grand Trunk Ry. to the Grand Trunk System must not be measured by the results of 1894. During the decade from 1885 to 1894 the Grand Trunk proportion of traffic interchanged with the Chicago and Grand Trunk was $29,749,732. This is the true measure of the advantages which are derived by the parent system from that line. In some of those years the Chicago and Grand Trunk provided a handsome surplus in addition to meeting all interest charges; in other years there were deficits in meeting such charges; but, deducting the former from the latter, and including the abnormal deficit under traffic agreements of 1894, the Grand Trunk Co. has only paid altogether less than 3½%—which may be looked upon in the shape of a rebate—upon the traffic interchanged as above during the past decade, which traffic would otherwise have been in great measure lost to the system."

Mr. Tilley further pointed out that in presenting the report of 1914, the Chairman of the Board stated:—"It must be remembered with regard to our lines in the United States, that although during the past year they show unsatisfactory results, they nevertheless even then brought considerable benefit to the parent line. The Grand Trunk proper is situated in such a position that feeders from the outside are absolutely necessary, that disappointing as the results are for the moment on both the feeders and the parent line, the Grand Trunk proper would have been in a worse position but for the very feeders."

There is no doubt that the Grand Trunk does receive a large tonnage from these American connections. The Government statistics down to 1912 do not distinguish between tonnage received from connecting roads and other carriers, so as to distinguish the traffic received from United States roads as against traffic received from Canadian connections. This distinction is made in the statistics for 1913 and is continued. The statistics for the Grand Trunk are as follows:—

Year.	Originating on Road. Tons.	%	Received from other Roads in Canada. Tons.	%	Received from U.S. Roads. Tons.	%	Total Freight Tonnage.
1913	9,065,232	42.1	2,823,204	13.4	9,153,370	44.5	21,041,806
1914	9,062,258	45.2	2,914,508	14.3	8,050,689	41.5	20,027,455
1915	8,090,873	43.6	2,232,641	12.1	8,172,509	44.39	18,496,023

The Grand Trunk statistics for 1915 include the operations of the former Canada Atlantic Ry. that were reported separately prior to 1915, although the road had been purchased by the Grand Trunk and became part of its Ontario system in 1905.

With the above figures may be contrasted those of the Canadian Pacific, which are as follows:—

Year.	Originating on road. Tons.	%	Received from other roads in Canada. Tons.	%	Receiver from U. S. roads. Tons.	%	Total Freight Tonnage.
1915	21,044,667	71.7	6,458,718	21.7	1,968,429	6.6	29,471,814
1914	20,296,434	73.005	5,690,385	20.495	1,814,398	6.5	27,801,217
1915	15,179,618	70.6	4,909,355	22.9	1,401,623	6.5	21,490,596

It is at once apparent that with the greater total tonnage that the Canadian Pacific has, operating as it does to common gateways on the American frontier with the Grand Trunk, it receives, speaking in general terms, less than one-quarter of the American business the Grand Trunk enjoys. The Government statistics but confirm the conclusion contained in the company's reports. The manifest qualification must, however, be made and the fact emphasized that while the Grand Trunk proper does benefit by the business it obtains from its American subsidiary lines, that these lines in turn benefit from the connection with the parent company. The whole tonnage carried does not originate in Chicago or on the Chicago and other western connections, although the greater movement does originate in the territory thus served.

The directors' reports of June and December, 1915, for the first and latter half of the years 1894 and 1895, divided this American tonnage as follows:—

	East Bound	West Bound
No. of tons, June, 1894....	898,885	311,192
Per cent of total, June, 1894	36	22
No. of tons, June, 1895....	803,581	309,762
Per cent of total, June, 1895	32	22
No. of tons, Dec., 1894	890,511	359,739
Per cent of total, Dec., 1894	32	25
No. of tons, Dec., 1895	873,904	398,666
Per cent of total, Dec., 1895	31	24

It is, of course, in the interests of the shipping public that the railways serving them should be in such a position as to make the necessary additions to facilities which from time to time are of necessity required, and to provide adequate and proper rolling stock. The Grand Trunk receipts for 1914 and 1915 are of such a character that economical financing is rendered extremely difficult, if not impossible. It is undoubtedly true that earnings for these years cannot, as has already been pointed out, be regarded as characteristic, but the economies forced on the company, if continued, must result in inferior accommodation and service. Appropriations of all kinds have been cut.

The car question is one in which those opposed to the present application are largely and vitally interested. The year 1913 was good, with much tonnage; but, on Dec. 31 of that year, there were but 2,416 freight cars waiting for and undergoing shop and light repairs; while on Dec. 31, 1914, with the lighter business and movements of that year, the number of freight cars requiring like repairs had grown to 3,326; and, on Dec. 31, 1915, the number had increased to 4,092. A railway's register of box cars always includes a certain number of freight cars which either are being scrapped and replaced by other cars. In order to maintain the present total of 43,805 freight cars owned by the Grand Trunk in a proper and serviceable condition, no less than 1,249 new freight cars have to be obtained at a returned cost of $2,238,000.

Track also has to be renewed. In 1913, the renewals amounted to 177 miles; in 1914, 327 miles and in 1915 the work was cut to 67 miles. The average normal annual renewal for a mileage of main track of 4,311 miles is estimated to amount to 431 miles. In view of the company's past operations, this annual average may be unduly high, but beyond all question the economies of last year will have to be taken up in the future. It may be also noted that the expenditure for 1915 and the estimate for 1916 for renewal work on bridges and culverts is $21,135 less than the yearly average for the years 1906 to 1915 inclusive. Other economies have been enforced in connection with locomotives, building, and the like, on which it is not necessary to dwell. Beyond all question, however, they cannot continue indefinitely without great loss and inconvenience to the shipping and travelling public. The railway's balances available for distribution from 1909 to 1915 have already been set out. They run from $2,473.06 per mile of line, in 1909, to $3,531.12 in 1913, dropping in

1915 to $2,477.71.

If the costs of the National Transcontinental were applied to the Grand Trunk mileage, adding a conservative estimate of $10,000 a mile for equipment, a value of $86,632 a mile is arrived at; 6% on its capital to provide 4% for interest charges and 2% to enable necessary financing and expenditures to be made, would call for net earnings per mile of line of $5,197.92. In the same way, adopting as the standard the expensive line of the Canadian Pacific from Glen Tay to Agincourt, adding again $10,000 for equipment, the net earnings per mile of line should be $4,892.82. If the line from Toronto to Sudbury be taken as a basis, net earnings per mile of $4,001.34 are required; while on the basis of the Intercolonial, the net results should be $4,503.96. Irrespective entirely of the Grand Trunk's terminal expenses, which do not apply at any rate in nearly so marked a degree in the other lines now compared with it, it will be observed that the Grand Trunk's best earnings fall considerably short of the earnings required on any of the other standards. While present earnings are increasing, they are still considerably short of the result obtained in 1913.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the oBard of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

25963. Mar 24.—Authorizing Canadian Northern Ry. to build across 13 highways in Tps. 18, 19 and 20, R. 7, e.p.m., Man.

25964. Mar 26.—Authorizing C.P.R. to build joint spur for J. H. Lamarche and l'Institution des Sourde Muets, Lot 642, Montreal, subject to Royal Trust Co.'s consent as to removal of same.

25965. Mar. 24.—Authorizing Canadian Northern Ry. to build across and divert 6 road allowances in Tps. 19 and 20, R. 7, e.p.m., Man.

25966. Mar. 26.—Approving plan showing standard ballast dock for timber trestles, to be used on Canadian Northern Ry., Eastern Lines.

25967. Mar. 27.—Rescinding order 24481, Nov. 25, 1915, in so far as it exempts Kettle Valley Ry. from erecting and maintaining fences, gates and cattle guards between mileage 35.3 and 44, midway to Penticton, B.C., K.V.R. being required to erect fences along said portion by May 1.

25968. Mar. 26.—Approving agreement between Bell Telephone Co. and Evergreen Telephone Co., Renfrew Co., Ont., Mar. 14.

25969. Mar. 13.—Ordering Canadian Northern Ry. to appoint watchman at crossing of Main St., Vegreville, Alta., between 8 a.m. and 7 p.m. daily; wages to be paid by municipality, and relieving C.N.R. from speed limit of 10 miles an hour at crossing.

25970. Mar. 30.—Authorizing C.P.R. to build 8 tracks, one of which crosses Northwest Road at grade, one crossover, and to rearrange west leg of Y on Northwest Road for British Cordite Co., McDougall Tp., Ont.

25971. Mar. 28.—Authorizing Canadian Northern Ontario Ry. to build spur for Marsh & Henthorn, Belleville, Ont., and approving clearances.

25972. Mar. 28.—Dismissing application of Town of Napanee, Ont., for order directing Canadian Northern Ontario Ry. to build subway at Belleville Road crossing.

25973. Mar. 27.—Approving Canadian Northern Ry. Standard Passenger Tariff, C.R.C. no. W-1422, showing rate of 4c mile on branch lines in British Columbia.

25974. Mar. 29.—Authorizing Nelson & Fort Sheppard Ry. to discontinue stopping trains at Porto Rico, B.C., mileage 23.8, and to substitute stop at mileage 22.6.

25975. Mar. 29.—Establishing free collection and delivery limits and additional toll zone of express companies in Toronto.

25976. Mar. 30.—Approving agreement between Bell Telephone Co. and Eastern Townships Telephone Co., in Richmond, Compton, Stanstead, Shefford, Drummond and Arthabaska counties, Que., Mar. 1.

25977. Mar. 30. Authorizing C.P.R. to make highway diversions at grade across track along eastern boundary of right of way in n.w. and s.w. ¼ Secs. 36-9-1, w.3m., in lieu of road allowance on westerly boundary.

25978. April 2.—Approving plan and specifications of Henry Robertson award drain, so-called, under G.T.R. in Matilda Tp., Ont.

25979. April 2.—Authorizing G.T.R. to use bridges 15, 18 and 24, District 2, authorized to be built by order 24664.

25980. Mar. 30.—Ordering Canadian Northern Ry., C.P.R. and G.T.R., to provide interchange tracks on Pinnacle St., Belleville, Ont. This order is given fully on another page.

25981. Mar. 16.—Relieving Grand Trunk Pacific Ry. from providing further protection at highway between Secs. 29 and 30-44-6, w.4m., near Wainwright, Alta.

25982. April 2.—Authorizing Department of the Interior to make highway over C.P.R. at west end of yard at Banff, Alta., and about 700 ft. west of station.

25983. April 2.—Authorizng Essex Terminal Ry., Windsor, Essex & Lake Shore Rapid Ry. and C.P.R. to operate over crossing in Sandwich West Tp., Ont., without first stopping.

25984. Mar. 31.—Relieving Grand Trunk Pacific Ry. from maintaining fences, gates and cattle guards immediately east of Wolf Creek station, Alta.

25985. Mar. 31.—Approving plan showing general layout of Canadian Northern Ry. structure crossing Moose Jaw Creek (3rd crossing), and Manitoba St., Moose Jaw, Sask., dated Nov. 10, 1916, detail plans to be filed for approval.

25986. Mar. 31.—Authorizing C.P.R. to build spur across Hunter St. at grade and crossover connections with present spur for Quaker Oats Co., Peterborough, Ont.

25987. April 2.—Extending to June time within which Canadian Northern Ry. shall complete station at Norway Bay, Que.

25988. Mar. 31.—Ordering Canadian Northern Ry. to file within 30 days for Board's approval plans showing necessary alterations to Pointe Aux Trembles station.

25989. April 4.—Approving, in pursuance of powers conferred upon Board by sec. 26 of Exchequer Court Act. the sale of the Joliette & Lake Manuan Colonization Ry. and its rolling stock, equipment and other accessories.

25990. April 3.—Ordering Montreal & Southern Counties Ry. to stop train 131 from Marieville, on flag, at East Greenfield Park, and to keep record of stops made there for three months, to enable Board to determine whether service should be continued.

25991. April 5.—Authorizing Canadian Northern Ry. to build spur for Canadian Cooperage Mfg. Co., South Crosby Tp., Ont.

25992. April 4.—Ordering Grand Trunk Pacific Ry. to pay half cost of land acquired from C.P.R. Natural Resources Department for transfer track between G.T.P.R. and C.P.R. at Frobisher, Sask.

25993. April 3.—Approving plan showing proposed arrangement of signals at Canadian Northern Ontario Ry. crossing of Rideau Canal, Smiths Falls, Ont.

25994. April 4.—Authorizing Grand Trunk Pacific Branch Lines Co. to build spur for Munson-Oliphant Collieries, Ltd., in n.w. ¼ Sec. 28-48-21, w.5m., Alta.

25995. April 5.—Authorizing C.P.R. to build 4 spurs, for William Davies Co., Ltd., near Don Station, Toronto.

25996. April 3.—Amending order 25946, Mar. 20, 1917, re Canadian Northern Quebec Ry. spurs for Imperial Oil Co. in Pointe aux Trembles Parish, Que.

25997. April 7.—Approving plan of La Bute Award Drain, to be built under C.P.R. in Camden Tp., Ont.

25998. April 10.—Authorizing Grand Trunk Pacific Branch Lines Co. to build spur for Buckeye Machine Co. in s.e. ¼ Sec. 14-24-29, w.4m., Alta.

25999. April 10.—Amending order 25829, Jan. 26, re G.T.R. crossing at Grimsby Beach station, Ont.

26000. April 10.—Approving Public Works Departments amended plan, dated Jan. 31, showing bridge to be built across St. Charles River at Quebec; and rescinding order 26290, Sept. 19, 1916.

26001 to 26004. April 10.—Approving locations of C.P.R. stations at Vidora, Stalwart, Consul and Traynor, Sask., all in accordance with C.P.R. standard A2 station plan.

26005. April 3.—Authorizing Canadian Northern Ry. to build spur for Riordan Pulp & Paper Co., Hawkesbury, Ont.

26006, 26007. April 10.—Approving Bell Telephone Co. agreements with Fort Coulonge Rural Telephone Co., Pontiac County, Que., Mar. 30, and Sandwich South Tp., Ont., Dec. 22, 1916.

26008. April 12.—Re Canadian Northern Ry. lake and rail rates applying from points east of Toronto, via Toronto and lake lines to Port Arthur and thence to western points. This order is given fully on another page.

26009. April 14.—Approving Halifax & South Western Ry. bylaw 7 re passenger and freight tariffs and tolls and rescinding order 22696, Oct. 6, 1914, approving bylaw 6.

26010. April 14.—Approving agreement between Bell Telephone Co. and Lyndhurst Rural Telephone Co., Leeds County, Ont., Mar. 29.

26011. April 13.—Approving Canadian Northern Ry. bylaw, April 9, re tariffs of freight tolls on all freight carried on any part of its system, cepting to and from points west of Port Arthur or Westfort, Ont.

26012. April 14.—Authorizing C.P.R. to build at grade a passing siding across road allowance between Lots 22 and 23, Con. 3, Scarboro Tp., Ont.

26013. April 14.—Approving revision in location of C.P.R. spurs for Canadian Aeroplanes, Ltd., Toronto Ont.

26014. April 11.—Approving plans showing locomotive house to be built by Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) at Vancouver.

26015. April 13.—Authorizing C.P.R. to prosecute C. C. Curtis, Lacombe, Alta., for alleged fraudulent underbilling of certain shipments of freight.

26016. April 16.—Authorizing G.T.R. to build service track at grade across Kipling Ave., New Toronto, Ont.

26017. April 18.—Approving plan of abutments and superstructure for Canadian Northern Ry. undercrossing of farm lane, Lot 8, Con. 3, York Tp., Ont.; C.N.R. to provide hard gravel road through subway within the right of way limits, grade not to be greater than 1 in 10.

26018. April 17.—Authorizing North American Collieries, Ltd. (Pembina Colliery) to build 3 entries under Canadian Northern Ry. right of way in Sec. 30-53-7, w.5m., Alta.

26019. April 16.—Ordering C.P.R. to erect Standard Class A-2 station building at Whitla, Alta; to be completed by Sept. 1, 1918.

26020. April 16.—Authorizing G.T.R. to build additional or passing track on and across Pine and John Sts., Dunnville, Ont.

26021. April 16.—Dismissing G.T.R. application for approval of location and detail plans of combination freight and passenger station to be built at Nelles Corners, Ont., and authorizing it to build additional track across public road between Lot 52, Con. 1, north of Talbot Road, Cayuga Tp., and Lot 2, Con. 9, Rainham Tp., Ont.

26022. April 17.—Authorizing G.T.R. to build siding for Dominion Abrasve Wheel Co., Mimico, Ont.

26023. April 17.—Authorizing C.P.R. to build spur at grade across Main St., Glenmorris, Ont.

26024. April 16.—Adding City of Brantford, Ont., as joint applicant and ordering that all proceedings and orders made apply to and be binding on Lake Erie & Northern Ry. as if it had been originally named as joint applicant in proceedings with Brantford Parks Board, defined in Public Parks Act (Ontario) as The Board of Park Management.

26025. April 18.—Ordering Canadian Northern Ry. to build standard third class station at Sibbalt, Alta., by Sept. 1.

26026. April 18.—Rescindng order 25211, July 17, 1916, suspending increased rates on ores and concentrates, published in C.P.R. C.R.R. no. W-2168, effective Aug. 1, 1916, from points in British Columbia.

26027-26028. April 16.—Authorizing Canadian Northern Ry. to build across highways between Lots 34 and 35 and Lots 32 and 33, Con. C, Scarboro Tp., Ont.

26029-26030. April 16.—Approving Bell Telephone Co. agreements with Bromley Telephone Association, April 2, and Wolftown Telephone Association, Aug. 25, 1915, both operating in Renfrew County, Ont.

26031. April 17.—Ordering G.T.R. to build subway about 300 ft. east of crossing of Lynn Road, Elizabethtown Tp., approaches and road diversions to be built by township and Leeds and Grenville counties and said counties as they shall agree, if they cannot agree, matter to be determined by board; 20% of cost to be paid out of railway grade and crossing fund, balance of total cost, 15% by counties, 15% by applicant, and 50% by G.T.R.

26032. April 17.—Approving agreement between Bell Telephone Co. and Madawaska Telephone Association, Renfrew county, Ont., Mar. 29.

26033. April 19.—Extending to July 1 time within which Kettle Valley Ry. shall erect fences between mileage 35.3 and 44, Midway to Penticton, B.C.

26034. April 16.—Dismissing complaints of C.P.R. and Spanish River Pulp & Paper Mills, Ltd., against cancellation of interswitching rate of $1.50 a car at Espanola, published in Algoma Eastern Rv tariff C.R.C. 73; and authorizing Algoma Eastern Ry to charge interswitching rate of 1c per 100 lb., shown in Tariff, C.R.C. 169, from effective date of said tariff, Feb. 15.

General order 185. Mar. 30.—Re classification of veneer. This order is given fully on another page.

General order 186. April 4.—Dismissing complaint of Dominion Millers Association and Toronto Board of Trade re carload minimum weights on grain and grain products. This order is given fully on another page.

General order 187. April 12.—Re rail and water rates between Eastern and Western Canada. This order is given fully on another page.

Canadian Pacific Railway Construction, Betterments, Etc.

New Brunswick District.—The C.P.R., as lessee of the New Brunswick Coal & Ry. Co., is applying to the Minister of Railways for approval of site and plans for the reconstruction of a bridge across the Washademoak River, in Johnston Parish, N.B.

Ontario District.—The C.P.R. applied to the Board of Railway Commissioners, April 13, for approval of its plans for a revision of its North Toronto Branch, including the building of a second main line track across the G.T.R.—the old Toronto Belt Line Ry.—the construction of a second main line track at grade across Todmorden Road, in York Tp., and McLennan and Summerhill Aves., in Toronto. The City of Toronto opposes the plans on the ground that there should be one bridge at Summerhill Ave., instead of separate structures for each track, and that there should be a subway at the west end of the bridge. The Civic Guild advocated as an alternative plan the providing of subways and a general traffic bridge across the ravine. The matter will be looked into by the Board's Chief Engineer prior to any decision being reached.

Manitoba District.—The work to be done at Brandon during this year is estimated to cost approximately $50,000. It includes the laying of an asphalt block pavement in front of the station, replacing the present wooden pavement; the building of a coal dock about double the size of the present one; the building of a sanding plant for locomotives; the installation of a washing out system for locomotives in the locomotive house, and the installation of an interlocking plant in the yards.

Saskatchewan District.—Tenders are under consideration for the erection of a building at Regina, Sask., for the Dominion Express Co.

Alberta District.—Work on track maintenance on the lines in the vicinity of Lethbridge has been started. A new shovel has been set at work at the ballast pit at Elcan.

Tenders are under consideration by the C.P.R. Department of Natural Resources for irrigation canal enlargements through Sections 12, 13, 24 and 25 in Tp. 7, Range 21, west of the 4th Meridian, Alta. The work is located about five miles west of Wilson station and about ten miles south of Lethbridge, and involves the excavation of approximately 150,000 cu. ft. of earth work.

We are officially advised that at places where the gradient was very irregular over the slide of Turtle Mountain, at Frank, the company is making improvements, the work being done by steam shovels loading rip rap. The work being done at present is not in the nature of grade reduction.

British Columbia District.—In addition to the betterments to be carried out during this year, mentioned in our April issue, it is reported that the following works will also be done: Concrete portals and concrete tunnels on two tunnels on the double track between Revelstoke and Taft; bank protection on the Kootenay Central Ry., between Golden and Colvalli; a steel bridge across the St. Marys River, on the Kinderley Subdivision; and bank protection and bridge improvement in the Kicking Horse Canyon.

A press report states that a contract has been let for the removal of the old immigration detention shed and the erection of a new ramp or sloping structure to connect with pier A on the Vancouver water front. The new approach will, it is said, lead from Burrard St., and will be similar to that leading from Granville St. to pier D. Pier A is to be extended sufficiently to permit the erection of additional storage capacity to that formerly available in the old immigration shed. The estimated cost of the work is $70,000.

The Canadian Pacific Railway's Honor Roll No. 20.

Ainslie, Oliver	Blacksmith's helper	Revelstoke	Wounded
Armstrong, George	Apprentice	Regina	Wounded
Bain, Thomas	Porter	Fort William	Wounded
Baldwin, Arthur Ernest	Operator	Nokomis	Wounded
Beaton, John	Bridgeman	British Columbia Dist.	Wounded
Blades, Roland	Clerk	Winnipeg	Died of wounds
Buakeley, Harry	Checker	Vancouver	Killed in action
Bowden, William Henry	Ashpitman	Lambton	Wounded
Brown, Harry Allen	Stower	Saskatoon	Died of wounds
Bryant, William Edward	Locomotive fireman	North Bay	Killed in action
Buck, Marry	Laborer	Winnipeg	Died of wounds
Buttimer, Richard L.	Clerk	Toronto	Wounded
Campbell, Andrew	Wiper	Bay Shore	Wounded
Chudleigh, Starks	Locomotive fireman	Calgary	Presumed Dead
Cockrem, Ernest Dadds	Locomotiveman	Souris	Wounded
Collingwood, Angus S.	Cashier	Moose Jaw	Killed in action
Cooper, Arthur	Constable	Kenora	Killed in action
Coventry, William V.	Engineer	Edmonton	Died of wounds
Currie, Frederick M.	Assistant foreman	Transcona	Killed in action
Dougall, Ralph	Car repairer	Bankhead	Wounded and missing
Douse, Edwin T.	Clerk	West Toronto	Wounded
Edgar, John Paisley	Biller	Winnipeg	Wounded
Evans, Harold C.	Waiter	Calgary	Killed in action
Eve, Frederick J.	Brakeman	Fort William	Wounded
Fairbairn, Robert	Storeman	Calgary	Wounded
Freeman, Charles H. H.	Wiper	Moose Jaw	Wounded
Gardner, Harry	Draftsman	Montreal	Shell shock
Gillis, Lawrence A.	Locomotive man	Kaslo	Wounded
Goodday, Reginald L. H.	Car repairer	Calgary	Wounded
Graham, Henry E.	Cleaner	Calgary	Killed in action
Guest, Harry	Porter	McAdam	Killed in action
Hadfield, James	Boilermaker	Sutherland	Wounded
Hamilton, John		Fort William	Killed in action
Harris, Albert	Sleeping car conductor	Revelstoke	Wounded
Hawley, Ernest Alfred	Teamster	Montreal	Wounded
Hebinton, David	Car Carder	Calgary	Wounded
Herdman, Londoun A.	Stationery fireman	Ogden	Killed in action
Hicks, Stephen C.	Brakeman	Ignace	Killed in action
Hoon, Norman Fred.	Extra Gang foreman	Souris	Wounded
Horner, Thomas	Clerk	British Columbia Dist.	Wounded
Howe, George Frederick	Helper	Saskatoon	Wounded
Hume, James	Wiper	Calgary	Wounded
Hutton, Thomas	Trucker	Kenora	Wounded
James, Eber	Chef	Ogden	Wounded
Jones, William Samuel	Sectionman	Moose Jaw	Killed in action
Kissack, George	Waiter	Springstein	Wounded
Larkin, Frank William	Yardman	Toronto	Shell shock
Latimer, Archie	Clerk	Moose Jaw	Wounded
Lilburn, Harry Kent	Steward	Calgary	Died of wounds
Little, Charles Henry	Locomotive fireman	Brit. Col. Coast Service	Died of wounds
McAlister, James	Section foreman	Moose Jaw	Wounded
McCaffrey, James	Locomotive fireman	Tyndall	Wounded
McCurdy, Martin Everest	Car Tracer	Sutherland	Wounded
McGill, James	Conductor	Winnipeg	Wounded
McKay, Alexander Hugh	Watchman	Minnedosa	Wounded
McNaughton, Donald	Trainman	Shepard	Died of wounds
McTomney, John	Wiper	British Columbia Dist.	Killed in atcion
Magines, Joseph	Boilermaker	West Calgary	Wounded
Malcolm, Daniel	Locomotive man	Ogden Shops	Wounded
Manners, William	Clerk	Moose Jaw	Wounded
Matheson, John Kennedy	Inspector	Calgary	Wounded
Meats, George Henry	Painter	Angus	Died of wounds
Mines, Albert Henry	Gripper	Ogden Shops	Wounded
Moodie, J. S.	Mate	Lethbridge	Wounded
Morrison, Donald John	Yardman	Brit. Col. Lake Steamers	Killed in atcion
Mulcahy, Alfred	Checker	Glen Yard	Killed in atcion
Nightingale, John Graham	Locomotive fireman	Calgary	Killed in atcion
O'Brien, Alexander R.	Watchman	Regina	Wounded
Peterson, George	Clerk	Banff	Killed in atcion
Potter, John Keith	Carpenter	Victora	Wounded
Rimmer, Alfred	Teamster	Angus	Wounded
Ritchie, James	Lineman	Calgary	Wounded
Robertson, William	Porter	Cranbrook	Killed in atcion
Rashbrook, Sidney A.	Cleaner	Calgary	Wounded
Sale, Victor	Wiper	Toronto	Wounded
Sampson, Lewis F.	Wiper	Kenora	Killed in atcion
Sharples, James	Coalman	Regina	Wounded
Shortland, Frederick	Laborer	Fort William	Wounded
Simpson, Edward	Clerk	Strathcona	Wounded
Simmons, Arthur H.		Regina	Wounded
Sinclair, Andrew G.	Clerk	Govan	Wounded
Sinclair, William	Locomotive fireman	Winnipeg	Wounded
Skirten, William A.	Storeman	Ogden	Wounded
Sleep, William Henry	Locomotive fireman	Fort William	Wounded
Smeaton, George Robert	Waiter	Moose Jaw	Wounded
Smith, John	Brakeman	Winnipeg	Wounded
Solloway, Alfred Leo	Yard foreman	Winnipeg	Wounded and prisoner
Souter, Alexander	Clerk	Vancouver	Wounded
Spencer, Samuel	Red-Cap Porter	Winnipeg	Died of wounds
Stamper, William	Car repairer	Regina	Gassed
Stevens, Leonard	Constable	Moose Jaw	Wounded
Stevenson, Alexander	Waiter	Calgary	Killed in action
Stinson, Frank	Fitter	Lethbridge	Presumed dead
Tanton, William H.	Locomotive man	London	Wounded
Tomkins, Charles B.	Carpenter	West Toronto	Wounded
Tout, George	Wiper	Red Deer	Wounded
Smith, Alexander	Laborer	Moose Jaw	Wounded
Watson, William Panton	Conductor	Minnedosa	Wounded
West Robert	Locomotive fireman	Moose Jaw	Wounded
Westington, William C.	Trimmer	Schreiber	Wounded
Whitehouse, Walter	Helper	East Calgary	Wounded
Willis, Hugh Lea	Porter	Calgary	Died of wounds
Wilson, Harry Cameron	Yardman	Fort William	Shell shock
Wishart, James	Clerk	Angus	Wounded
Worth, Harold	Stenographer	Toronto	Wounded

Mainly About Railway People Throughout Canada.

Ignatius Roth, Terminal Agent, C.P.R. Montreal, died there recently, after a short illness.

Holman D. Waldron, General Passenger Agent, Maine Central Rd., died Apr. 9, aged 60.

E. W. Beatty, K.C., Vice President and General Counsel, C.P.R., has been elected a director of the Royal Trust Co.

G. M. Bosworth, Vice President, C.P.R., returned to Montreal, April 4, after a short trip to Hot Springs, Va.

J. G. Scott, formerly General Manager, Quebec & Lake St. John Ry., has been re-elected President, Quebec Board of Trade.

G. McL. Brown, European Manager, C.P.R., London, Eng., was installed as Master of the Royal Kew Lodge of Freemasons recently.

G. A. Bell, heretofore Financial Comptroller, Railways & Canals Department, Ottawa, has also been appointed Assistant to the Minister.

A. M. Nanton, director, C.P.R., and Vice President, Winnipeg Electric Ry., has been elected a director of the Guarantee Co. of North America.

Grant Hall, Vice President and General Manager Western Lines C. P. R., returned to Winnipeg, April 15, after a trip of inspection over the company's lines.

C. A. Dunham, Signal Engineer, Great Northern Ry., and formerly Signal Engineer, G.T.R., Montreal, has been elected President, Railway Signal Association.

H. D. Waldron, General Passenger Agent, Maine Central Rd., died at Portland, Me., April 9, aged 60. He entered the company's service in 1877 as a telegraph operator.

William Bain, who died at Dixie, Ont., Apr. 21, aged 74, was for a number of year Soliciting Freight Agent, C. P. R., Toronto. He retired on superannuation a few years ago.

George Bury, Vice President, C.P.R., who has lived at 278 Stanley Street since removing to Montreal, has leased 512 Sherbrooke St. West, from the late T. J. Drummond's estate.

D. M. McIntyre, K.C., Chairman, Ontario Railway & Municipal Board, Toronto, has been elected a member of the council of Queen's University, Kingston, Ont., to serve for 6 years.

E. C. P. Cushing, Secretary to the President, C.P.R., was presented with a travelling bag and a purse of money, April 18, by a number of a company's officials, on his approaching marriage.

W. H. Curle, K.C., who was appointed General Solicitor, C.P.R., recently was entertained to dinner at the Manitoba Club, Winnipeg, by a number of friends, on leaving there for Montreal.

The Hon. W. E. Foster, M.L.A., who became Premier of New Brunswick recently, is President of the St. Martins Ry., which runs between Hampton, on the Intercolonial Ry., and St. Martins, 30 miles.

Lord Shaughnessy, says a London, Eng., press cable, won the gratitude of many wounded soldiers when he bought up the pit of the New Treatre for their benefit on the day of the St. Patrick's matinee for the Munster Comforts Fund.

D. B. Hanna, Third Vice President, Canadian Northern Ry., has removed to 37 Cluny Ave., Toronto, which he has bought from the estate of the late James Bicknell, K.C., who lived there up to the time of his death.

J. D. Cameron, who died at Toronto, April 8, aged 77, was formerly a railway contractor on various lines in eastern Canada, having been concerned with various contracts on the Intercolonial Ry. and the Quebec & Lake St. John Ry.

J. E. Quick, General Baggage Agent, G.T.R., Toronto, was re-elected Secretary Treasurer of the American Association of General Baggage Agents, at its recent convention at Los Angeles, Cal.

E. B. Skeels, Resident Engineer, C.P.R., Lethbridge, Alta., from Aug., 1914, has resigned to enter an engineering and contracting business in Chicago, Ill. Prior to his appointment at Lethbridge, he was, from April, 1914, Resident Engineer, C.P.R., at Calgary, Alta.

Mrs. G. McL. Brown, wife of the European Manager, C.P.R., London, Eng., addressed meetings at St. John, N.B., Mar. 31, on the aims and work of the Canadian War Contingents Association and of the activities of the women in England.

T. A. S. Hay, M.Can.Soc.C.E., who died at Peterborough, Ont., Mar. 28, aged 68, was for many years Chief Engineer, Midland Ry., now part of the G.T.R., and was subsequently engaged in engineering on the construction of the Trent Canal, under the Department of Railways and Canals.

Elisha Lee, Assistant General Manager, Pennsylvania Rd., and better known as spokesman for the railways in the controversies with the railway brotherhoods, has been promoted to be General Manager, succeeding S. C. Long, deceased. Elisha Lee is a brother of Frank Lee, Principal Assistant Engineer, C.P.R., Winnipeg.

J. B. Harvey, C.E., who died at Ottawa, Ont., Mar. 31, aged 60, was engaged some years ago as a civil engineer on the construction of railways for the Reid Newfoundland Co., in Newfoundland, and later was in Dominion Government service on National Transcontinental Ry. construction, latterly he has been in the Militia Department's service.

C. R. Richards, Professor of Mechanical Engineering and head of the department since 1911, has been appointed Dean of the College of Engineering and Director of the Engineering Experiment Station of the University of Illinois to succeed W. F. M. Goss, who has resigned to become President of the Railway Car Manufacturer's Association of New York.

A. C. Harris, who has been Superintendent, Welland Ship Canal Construction Ry., has, in consequence of work on the canal construction being stopped until after the war, taken another position. He has been appointed by the Hydro Electric Power Commission of Ontario, as Railway Superintendent, in connection with the power canal from Queenston to Chippawa, it being the intention to have a construction railway built there.

W. Sayville, formerly Chief Clerk, B. C. Electric Ry., who has been appointed Comptroller, with office at Vancouver, entered the company's service in 1911. Prior to going to British Columbia, he had been in transportation service in England as chief assistant to the Secretary, Aire & Calder Navigation Co., which owns the port of Goole, and he was also in the underground electric railway service in London.

J. A. Jamieson, M.Can,Soc.C.E., who acted as consulting engineer during the construction of the Montreal Harbor Commissioners' elevators, was injured in a street car accident in Westmount early in April. Towards the end of the month he was reported to be improving rapidly.

R. G. Ward, chief clerk, G.T.R. station ticket office, Detroit, Mich., died there after a short illness, Mar. 29, within five days of completing 30 years of service with the company. He had served from April, 1887, successively as relieving agent, cashier, and ticket clerk, before being appointed to his last position.

Edward Percy Flintoft, whose appointment as Assistant General Solicitor, C.P.R., Montreal, was announced in our last issue, was born at Sarnia, Ont., Oct. 17, 1879, and entered C.P.R. service, Nov. 1, 1908, since when he has been, to Jan. 1, 1912, Assistant to Solicitor; Jan. 1, 1912, to July 1, 1913, Assistant Solicitor; July 1, 1913, to April 1, 1917, Solicitor, all at Montreal.

Hon. F. L. Beique, who has been elected a director of the C.P.R. Co., succeeding the late Hon. Robert Mackay, was born at St. Mathias, Que., May 20, 1845, and was admitted as an advocate in 1868, and created a Q.C. in 1885. He has practised in Montreal for many years, where he was a batonnier of the bar in 1891 and 1893. He has been concerned in several cases of note before the Judicial Committee of the Imperial Privy Council, and was a counsel for the Dominion in the Behring Sea arbitration. He has been a member of the Senate since Feb. 8, 1902.

Sir Sam Fay, General Manager, Great Central Ry. of England, has been appointed to the control of military and munition train movements in that country, in connection with the Department of Military Railways, of which Sir Eric Geddes is the Director-General, and Sir Guy Granet, Deputy Director-General. The change will secure complete co-ordination of the railway military transport work at home and at the front. E. A. Prosser, General Manger, Rhymney Ry., has been appointed Deputy Director of Military Train Movements at the War Office, under Sir Sam Fay.

John Robert Clarke Macredie, M.Can. Soc.C.E., whose appointment as Resident Engineer, C.P.R., Moose Jaw, Sask., was announced in our last issue, was born at St. John, N.B., June 13, 1880, and graduated from the University of New Brunswick in 1901 with the degree of B.Sc. During the summers from 1898 to 1900, he was engaged in minor positions on surveys in New Brunswick, and was, from 1901 to 1902, Resident Engineer of the mines and railway, Albert Ry. and Mfg. Co., Hillsboro, N.B.; 1902 to 1904, transit man, Maintenance of Way Department, C.P.R.; 1904 to 1909, Resident Engineer on construction, C.P.R.; 1909 to 1915, Assistant Engineer on construction, C.P.R.; 1915 to Feb., 1917, Resident Engineer on the east end of Connaught Tunnel, C.P.R.

Hugh Edwards Weyman, who has been appointed Master Mechanic, Levis County Ry., Levis, Que., was born at Guildford, Eng., Aug. 27, 1883. From Sept. 1899 to Sept. 1901, he was a student in mechanical engineering at the Great Central Ry. locomotive works, Manchester, Eng., and from Sept. 1901 to May 1906, was a student, and foreman, insulation department. British Westinghouse Co., Manchester, Eng.; May 1906 to Apr. 1908, foreman,

winding shops, Siemens Dyno Co., London, Eng.; Apr. 1908 to June 1910, Construction Engineer, Gardner Engine Co., Manchester, Eng.; June 1910 to Nov. 1914, General Foreman of electrical shops Canadian Allis Chalmers Ltd., Montreal; Jan. 1915 to Mar. 1916, Power House Engineer, St. Lawrence Bridge Co., at the Quebec Bridge site.

Henry A. Everett, of Cleveland, Ohio, who died at Pasadena, Cal., April 11, aged 60, was, for a number of years interested in electric railways both in Canada and the U.S. He was Managing Director Montreal St. Ry. from 1892 to 1894, and as such he supervised the changing of the Montreal St. Ry. from horse traction to electric traction. He was for some time Vice President and General Manager of the Toronto St. Ry., and was a member of the Kiely-Everett syndicate which secured the franchise from the city for the operation of the street railway, under which the company works at present. The syndicate later sold to the present company, and Mr. Everett was selected by the city to supervise the change of the system from horse to electric traction. He was President, London St. Ry. Co. for several years, retiring at the end of 1914, and was also at different times President, Cleveland Railways Co., and Toledo Railways and Light Co.

H. J. Humphrey, who has been appointed Superintendent, Brownville Division, New Brunswick District, C.P.R., Brownville Jct., Me., was born at Berry's Mills, N.B., Jan. 26, 1879, and entered railway service in June, 1896, since when he has been, to Aug., 1897, telegraph operator at various points, Intercolonial Ry.; Aug., 1897, to Aug., 1901, telegraph operator, Boston & Maine Rd.; Aug., 1901, to April, 1902, telegraph operator, Intercolonial Ry.; May 9, 1902, to Sept. 6, 1903, telegraph operator, C.P.R., Calgary, Alta.; Sept. 6, 1903, to June 1, 1907, dispatcher, C.P.R., Calgary, Alta.; June 1, 1907, to Nov. 1, 1909, dispatcher, C.P.R., Medicine Hat, Alta.; Nov. 1, 1909, to April 10, 1911, dispatcher, C.P.R., Calgary, Alta.; April 10, 1911, to July 1, 1912, Chief Dispatcher, C.P.R., Macleod, Alta.; July 1, 1912, to Jan. 8, 1915, Car Service and Fuel Agent, Saskatchewan Division, C.P.R., Moose Jaw; Jan. 8, 1915, to Jan. 1, 1916, Superintendent of Car Service, Western Lines, C.P.R., Winnipeg; Jan. 1 to Nov. 6, 1916, Superintendent of Car Service, Eastern Lines, C.P.R., Montreal; Nov. 6, 1916, to Feb., 1917, Superintendent, Farnham Division, Quebec District, C.P.R., Farnham; Feb. to April 2, 1917, Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal.

Canadian Vessel Tonnage.—An Ottawa press dispatch states that there was a slight reduction in the tonnage of vessels on the Canadian register for the first two months of 1917. The figures at the end of February were: Steam vessels, 794,314 tons; sailing vessels, 475,693; against 799,183 tons for steam vessels, and 476,983 tons for sailing vessels, at Dec. 31, 1916. During January, vessels aggregating 11,743 tons were transferred from the British to Canadian register, and there was 900 tons of new construction. In February, there was 1,164 tons of new construction; 1,464 tons of transfers from British to Canadian register, and 758 tons of transfers from foreign to Canadian register; 14 sailing vessels of 1,271 tons were struck off the register during January, and 4,440 tons of shipping was sold in the U.S.; 5,285 tons was lost through wrecks and 2,212 tons condemned.

Mobilization of Canadian Pacific Railway Securities for War Purposes.

The President, Lord Shaughnessy, has issued the following circular to the shareholders: "With the assent of your company the British Treasury included among the securities which were being borrowed in Great Britain, the various outstanding obligations of your company, and these obligations have already been used, to some extent, for the purpose of pledge in New York as security for the obligations of the United Kingdom of Great Britain and Ireland. It became evident, however, that the obligations of your company, being to a large extent issued in a currency foreign to the American market, could be more advantageously utilized if put in a form familiar to American investors. The need of the British Treasury for securities to obtain dollars has been imperative to carry on the war, and your company has felt it not only a duty to be of assistance in this situation, but also a privilege, in view of the present position of your company having been in a large part due to the investment of British capital ever since its formation. No company in the British Empire stands in higher credit among American investors than the C.P.R. Co., and His Majesty's Government had the assurance that your company's obligations, if offered in a form suitable to the American market, could be readily sold in the United States in large amounts and at favorable price.

"Acting under an understanding with your company which you will be asked to ratify at the forthcoming special meeting, the Lords Commissioners of His Majesty's Treasury have decided to take over or acquire, under their general powers in that behalf, or under regulations made pursuant to the Defence of the Realm (Consolidation Act of 1914) and amending enactments, from all persons ordinarily resident in the United Kingdom, their outstanding holdings of Canadian Pacific 4% consolidated debenture stock, Atlantic and North West 1st mortgage 5% bonds, Algoma Branch 1st mortgage 5% bonds, Ontario and Quebec 5% debenture stock, which the Imperial Government proposed to lodge with your company in exchange for such an amount of 20-30 year 5% collateral trust bonds of the company in dollar form as will equal, at par, the value, on a 5% basis, of the securities received from the Treasury, calculating the pounds sterling at the rate of £21 to $100. If all of the above four issues should be acquired and deposited, your company would issue $198,979,580 of bonds, payable as to principal and interest in gold in dollars in New York or Montreal at the option of the holder, with a fixed maturity of 30 years, but redeemable at par at the option of your company on and after the expiration of 20 years. It is also to be provided that the bonds may be redeemed, if requested by the government, at 105 and interest, at any time within the first five years of their life. The pledged collateral will be lodged at the specific prices of 80 for the C.P.R. 4% debenture stock and at par for the above mentioned 5% securities.

"Under the proposed arrangement the annual fixed charges of your company will remain as they are at present, interest on the collateral trust bonds being covered by interest on the securities deposited as collateral, and, although your company is taking liability for repayment on a specified date, that liability is covered by an undertaking of the Imperial Government to provide the funds required for redemption of the bonds in whole or in part during the first five years, or after 20 years, or at maturity, as may be determined. Included in the 4% Consolidated Debenture Stock that the Imperial Government proposes to acquire and deposit is the amount of $40,000,000 issued by your company recently, and loaned to the British Treasury, which the Imperial Government will purchase at 80% of its face value, the proceeds of the sale, viz., $32,000,000, to be loaned to the Imperial Treasury for 5 years at an annual interest rate of 5¼%, payable semi-annually. Steps have been taken to secure the requisite authority from the Dominion Parliament. The details of the transaction will be fully set out in the formal agreement with the Imperial Government which will be submitted for your consideration and approval at the special general meeting called for the purpose."

It was announced from New York, Apr. 17, that with the object of keeping the market as clear of new offerings as possible for the reception of the forthcoming sale of U. S. Government bonds, J. P. Morgan and Co. and associates had cancelled the arrangements for handling the C.P.R. bonds, as on account of certain delays, it appeared likely that the latter could not be dealt with far enough ahead of the Government financing to prevent some interference. Arrangements had been made for offering the C.P.R. bonds at 97, and success was assured. It is expected that the matter will be taken up again when the Government financing has been completed.

Timiskaming and Northern Ontario Railway Report.

The Timiskaming and Northern Ontario Ry.'s report for the year ended Oct. 31, 1916, has just been issued by the commission which operates it, and an electric line—the Nipissing Central Ry.—for the Province of Ontario. Following are extracts:

Assets		
Cost of road		$18,129,015.07
Cost of equipment		2,507,791.71
Nipissing Central Ry.		483,123.31
Empire lumber plant, Latchford		6,625.07
Working assets		750,567.52
Deferred debit items		17,561.99
		$21,957,684.67
Liabilities		
Provincial loan account		$21,183,687.59
Working liabilities		533,418.33
Deferred credit items		226,275.14
Balance profit and loss		14,303.61
		$21,957,684.67
Earnings and Expenses		
Revenue from transportation		$2,044,808.99
Revenue other than transportation		93,312.96
Total operating revenue		$2,138,121.95
Maintenance of way and structures	$349,024.48	
Maintenance of equipment	248,702.04	
Traffic expenses	22,465.69	
Transportation expenses	842,058.75	
Miscellaneous operations	42,562.89	
General expenses	91,317.74	
Credits	1,954.13	
Total operating expenses		1,594,177.46
Net operating revenue		$543,944.49
Ore royalties		49,877.62
Rent from joint facilities		18,620.45
Rent from lease of road		13,347.04
Interest		1,736.36
Miscellaneous income		1,029.78
Total income		$628,555.74
Deductions from ncome		99,850.28
Total earnings		$528,705.46

Compared with the year ended Oct. 31, 1915, the total operating revenue increas-

ed $578,718.62; total operating expenses increased $237,127.59, and net operating revenue increased $349,591.03. Income from ore royalties increased $4,805.19; rent from lease of road decreased $3,254.33. Interest is a new item, and miscellaneous income decreased $1,828.20. The deductions from income increased $51,492.10, and the total earnings increased $318,166.83. From the profit and loss account which was increased from $415,664,24 to $1,028,273.85, there was paid to the Treasurer of Ontario, $1,000,000. Uncollectable accounts of $10,000 were cancelled and $3,021.36 was written off for retired road and equipment, leaving a balance of $14,303.61.

Traffic Statistics

Revenue passengers	485,759
Passengers carried one mile	26,972,091
Passengers carried one mile per one mile or road	82,107
Average distance carried (miles)	55.53
Average amount received	$1.29
Average receipts per passenger per mile	2.32 cts.
Passenger service train revenue per train mile	$1.33
Revenue freight carried (tons)	922,618
Tons carried one mile	173,842,519
Carried one mile per mile of road	529,201
Average distance of haul of one ton (miles)	188.42
Average revenue per ton	$1.44
Average amount received per ton per mile of road	00.77 cts.
Freight revenue per train mile	$2.18
Freight originating on the line (tons)	410,582
Received from Canadian lines (tons)	479,973
Received from U.S. lines (tons)	32,063
Total (tons)	922,618
Mileage of revenue passenger trains	475,833
Mileage of revenue mixed trains	60,430
Mileage of revenue freight trains	549,094
Total revenue train mileage	1,085,357

George Bury's Return to Canada.

George, Bury, Vice President, Canadian Pacific Railway, arrived in St. John, N.B., April 25, and proceeded to Montreal, which he had left on Jan. 23 for England, whence he accompanied Lord Milner to Russia, on a special mission. He was in Petrograd during the revolution, and remained there for some time afterwards at the Russian Government's request. He returned to London, April 5, and presented a report to the British Government, for which he was warmly thanked by Premier Lloyd George.

In an interview in London, with a Montreal Star reporter, he is quoted as saying: "I am too old to fight, but I thought I could do my bit at assisting at a solution of Russian transportation problems." In another interview at St. John, he is reported as saying: "In Russia I travelled from a point where I saw reindeer caravans to a point where I saw caravans of camels, that is, from Lapland to the Caucasus. There is no doubt whatever that after the war Russia will have to build several hundred thousand miles of railways. Russia made the mistake of patterning her railways after those of Europe rather than America.

Grain Inspection at Western Points.

The following figures compiled by the Department of Trade and Commerce, show the number of cars of grain inspected on railways at Winnipeg and other points on the Western Division, for March, and for seven months ended Mar. 31, compared with those inspected for seven months ended Mar. 31, 1916.

	Mar. 1917	7 months to Mar. 1917	7 months to Mar. 1917
C.P.R.	6,871	82,727	125,854
C.P.R., Calgary	864	5,518	4,885
C.N.R.	4,754	44,236	65,807
G.N.R., Duluth	1,322	2,726	4,197
G.T.P.R.	892	15,715	31,691
Total	14,703	150,922	232,434

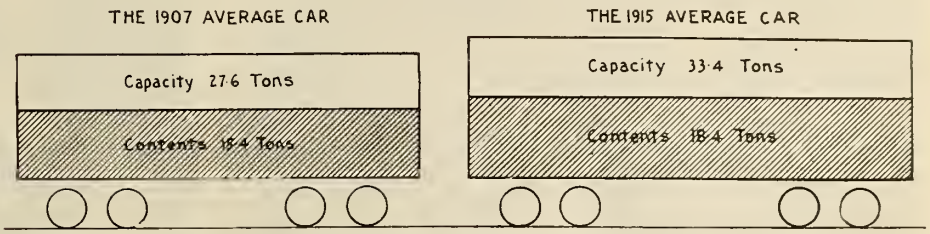
Increased Loading of Freight Cars on Canadian Pacific Railway.

The management of the C.P.R. Eastern Lines has taken steps to bring before the public the necessity for increasing the average loads of cars, so as to increase the efficiency of the rolling stock. A bulletin which has been issued gives the following facts:—

The railways statistics for 1907 and 1915 contain the following figures:

	1907.	1915.	Increase.
Total tons freight carried 1 mile	11,687,711,830	17,661,309,723	51.1%
Aggregate capacity of freight cars in tons	2,908,903	6,731,265	131.4%
Total freight cars	105,540	201,690	91.1%

The accompanying diagrams show that while the car capacity increased 5.8 tons, the contents increased only 3 tons, and that 48% of the additional capacity provided was not used. The public is asked to co-operate with the railways in an endeavor to remedy the existing car shortage. It can be done by utilizing to better advantage the present available rolling stock. Increasing the average car load to 23.4 tons, or 5 tons more than during 1915, would be equivalent to the placing of 54,800 additional cars in service. Light, bulky commodities, of which there are many, should be loaded to the full cubic capacity of cars. Heavier freight should be loaded to the maximum carrying capacity authorized.



Alfred Price, Assistant General Manager, Eastern Lines, C.P.R., has favored us with the following particulars in regard to the loading of 80,000 lb. cars with wheat up to 94,000 lb. "Axles used for cars of this capacity are 5⅝ in. in diameter, and according to the M. C. B. rules, such cars may be loaded to 10% in excess of their marked capacity, that is 88,000 lb. The opinion of experts is that the axles can safely carry 132,000 lb. including the tare, and as the tare of C.P.R. cars of this capacity is 38,000 lb. the difference, 94,000, can be safely carried. We accordingly have been loading such cars from and to points on our own line with 94,000 lb. of wheat and other commodities, the weight of which can be accurately determined. Between May 1 and Dec. 31, 1916, we loaded from our Port McNicoll, Ont., elevator, in 80,000 lb. cars, 17,769,391 bush. of wheat for export via Montreal and via St. John, N.B. Up to some time in November this wheat was taken to Montreal, 358.8 miles, and from then until the end of the year, to West St. John, 836.6 miles. In moving this wheat 11,366 cars were actually used, so that the average load carried was 93,803 lb. or 1,563 bush.; 94,000 lb. equals 1,566 bush., so that the cars were loaded up to within three bushels of the authorized limit. Under these instructions the company saved the use of 750 cars, and the haulage of dead tare to the extent of approximately 9,253,502 ton miles. There was not a single accident due to the cars carrying excess tonnage, although the total loaded car mileage was approximately 4,757,075."

Express Collection and Delivery Limits in Toronto.

In Canadian Railway and Marine World for April, a short summary was given of the Board of Railway Commissioners' judgment in an application by the City of Toronto for an extension of the express collection and delivery limits. As the judgment contains several points which are of interest to other cities similarly placed, a more extended summary is considered advisable. The judgment was given by D'Arcy Scott, Assistant Chief Commissioner, and subsequently order 25975 was passed, dated Mar. 29, as follows:

1. Until further order the tolls of express companies subject to the Board's jurisdiction for the carriage of express freight shall include collection or delivery by the companies, or their agents, in all thoroughfares in that portion of the city bounded continuously as follows, and including both sides of thoroughfares named as boundaries: By Keele St. from Humber Bay, Bloor St., Runnymede Rd., St. Clair Ave., Russell Hill Road, Lonsdale Road, Oriole Road, Gormley Ave., Lawton Ave., Glen Ave.; thence following the present eastern boundary and the C.P.R. and Belt Line Ry. to Danforth Ave. (Bloor St. bridge); Danforth Ave., Jones Ave., Gerrard St., Greenwood Ave., Queen St. and Morley Ave. to Ashbridge's Bay, and then along the Keating channel to the harbor; the water front from the Keating channel to Keele St. to be the southern boundary. Also in Weston Road from St. Clair Ave. to and including the Willys-Overland automobile works, Greenwood Ave. from Gerrard St. to the G.T.R., and Queen St. from Morley Ave. to Beech Ave.

2. Collection and delivery shall be made by the companies, or their agents, in all thoroughfares reasonably passable for express wagons outside of the aforesaid free area for any distance not exceeding half mile from the nearest free collection and delivery point, in any direction except southerly, at the following tolls for the said additional cartage service: For any one consignment of the aggregate weight of not more than 100 lb. from one shipper to one consignee, 15c; for each additional 100 lb., or fraction thereof, in the same consignment, 10c; provided that any consignee desiring to call at the express office for all his express freight, or to have it delivered by an independent carter of his own selection, shall so notify the express company in writing, and thereafter and until written withdrawal of such notice the express company shall not deliver to such consignee through its own cartage service.

3. This order shall become effective May 1, 1917, thereupon rescinding order 16468, May 6, 1912.

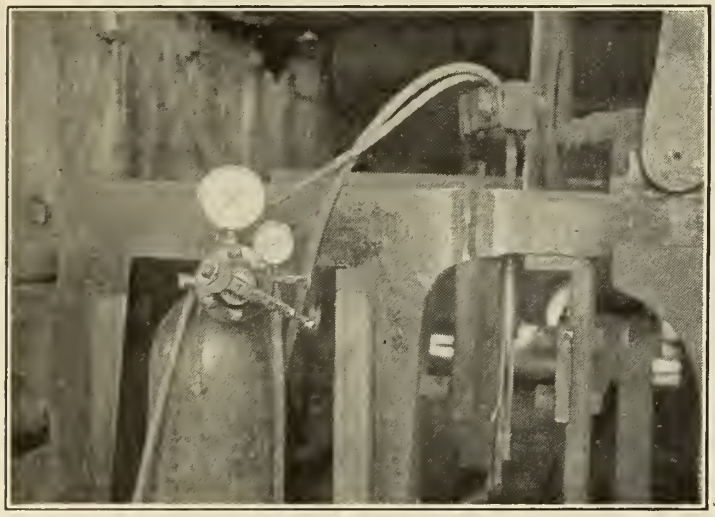
The express companies doing business in Toronto voluntarily established free delivery of parcels many years before the formation of the Board of Railway Commissioners. The original city limits have been extended from time to time, and al-

so the limits of the free delivery area, the latter being made to satisfy the exigencies of the moment, and not based on any principle which might be a guide to some permanent method to be provided for future expansion. The first order relating to express delivery limits in Toronto was issued May 6, 1912, and many important changes have taken place since then. The present limits do not follow the municipal boundaries, are not based on any principle of mileage from a central distributing office, nor are they arranged on density of population. Certain sections at present without such service are being unjustly discriminated against. If a delivery service had never existed and one was now being established, it would be a simple matter to arrange a central zone with boundary lines in all places of equal distance from the distributing centre, and with wider zones beyond the free zone with a toll based on mileage and the weight and bulk of parcels. Municipal boundaries may be taken as suitable limits in villages, towns and small cities, but in a city of the size of Toronto, and the boundaries are from time to time enlarged, they alone cannot be taken as suitable limits for express service. There must be limits which an express company should not be expected to go in giving either a free or a toll delivery service. There should be a central zone in Toronto in which a free pick up and delivery service should be given, and additional areas in which similar service should be given for a toll based on mileage from the free zone, and the weight and bulk of the parcels dealt with. Because of established business interests based on free delivery service as given in the past, it would not now be fair to have a free zone based on mileage only, and the free zone will have to be rectangular in shape. It will consist of all the territory which now has a free service with the addition of sections south of St. Clair Ave., known as Wychwood and Braeondale, and both sides of all streets. It is much fairer to those living just outside the free zone that they get a service for a reasonable toll, than that they get no service, and the boundaries are the fairest that can, under the circumstances, be selected. The service outside the free area could be varied from time to time, but at present it should be within half a mile of the nearest free zone limit, except the southern limit, that is, there should be no delivery beyond the water front. The charge will be based on a minimum of 15c for parcels not over 100 lbs., and 10c additional for each 100 lbs. or fraction thereof, for parcels in one consignment. This is a new practice being established, and as the toll area is somewhat of an experiment, the companies must keep an account of the number of consignments they deliver or collect on which toll is charged, the amounts collected, and the cost of the service, and a report giving such information must be made to the Board after operation for one year, so that the provisions now established may be reconsidered and revised if the Board thinks necessary. Companies should keep a list of persons outside the free area who do not wish the companies to deliver parcels. Anyone desiring to be on that list must notify the companies, and if the companies are not so notified they would have the right to exercise all the powers they have under the Railway Act for collecting tolls for such service. The toll, and this provision for notifying the companies will appear in the tariffs and will become part of the contract between the shipper and the companies. The service indicated will be subject to the usual condition that it need only be given on thoroughfares which are in a reasonably passable state for express wagons.

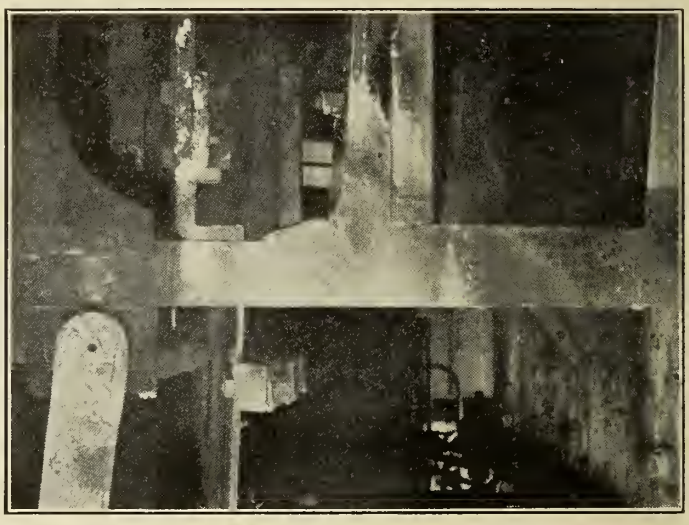
Welding a Locomotive Frame at the Grand Trunk Shops.

The locomotive frame shown in the accompanying illustration was handled in the G.T.R. shops at Point St. Charles, Montreal. It was first cut out by a cutting torch and then cleaned up with an air hammer and chisel. It was then preheated by an oil lamp to a good welding heat. Two men, using Swedish iron as a filler, then proceeded to weld it—one man inside the frame and the other man outside. The cost was as follows:

	Labor.	Material.
1 man cutting out and chipping, 1 hr.	$0.40	
2 men welding, 3 hrs. @ 40c each	2.40	
Blacksmith, 1 heat:		
Oxygen and gas: 60 ft. oxygen, 10 ft. gas	...	$1.12
Oxygen, 250 ft. @ $1.75 per 100 ft.	...	4.37
Swedish iron: 4 lbs. @ 8c	...	.32
	$2.80	$5.81
		2.80
Total	...	$8.61



Locomotive Frame Before Welding.



Locomotive Frame After Welding.

Canadian Freight Association Committees.

The following committees were elected at the annual meeting, April 11:

Advisory: G. H. Shaw, C. E. Dewey, H. E. Macdonell and J. H. Meglemry.

Executive: G. C. Martin, H. E. Macdonell, H. C. Martin and G. Tombs.

Classification: M. H. Brown, J. Edward, L. Macdonald, H. E. Macdonell, R. E. Perry, J. Orr, A. O. Secord, E. N. Todd, G. Tombs and F. J. Watson.

Freight Inspection: W. B. Bamford, M. H. Brown, G. H. Clark, G. T. Pettigrew, W. S. Elliott, R. W. Long, G. C. Martin, P. Mooney, R. J. S. Weatherston and R. W. Youngs.

Vegetable Growing on Railway Right of Way.—The C.P.R. employes on the Souris, Man., Division, have formed an organization to grow vegetables on unused portions of the company's right of way on the division. Seed will be purchased wholesale and distributed, and prizes will be offered for competition among the different sections.

National Cash Register Co. Changes its Advertising Policy.

After spending millions of dollars in both direct-by-mail and publication advertising, the National Cash Register Co. has decided to discontinue its gigantic direct-by-mail advertising department and to concentrate the bulk of its future advertising in the trade press and other papers. In making the announcement the National Cash Register Co. says: "In order to do this it has abandoned direct-by-mail advertising of its machines to $1,600,000 probable purchasers in the United States and Canada, and has sold its mailing equipment, in favor of open advertising in the trade press, financial papers, magazines and newspapers, solely because the latter has brought better results and secured more sales than the former.

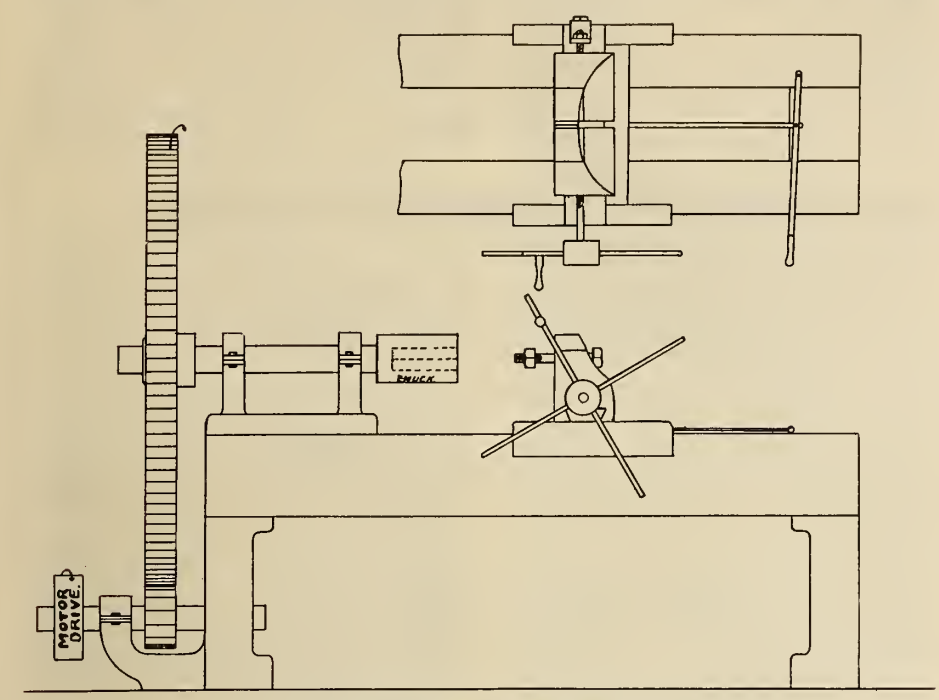
New Publications Received.

Canada in Flanders, vol. 2, by Lord Beaverbrook. Cloth; 5 x 7½ inches; 258 pages; with maps. Toronto, Hodder & Stoughton. 35c, postage 7c extra.

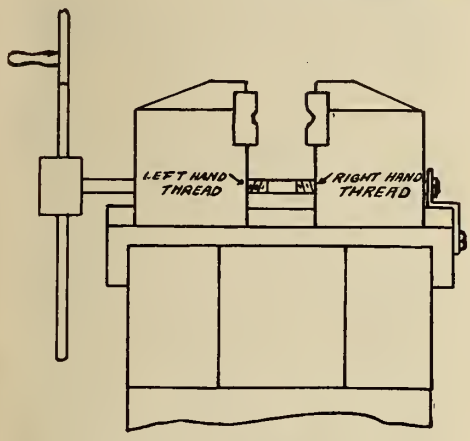
Pacific Ports.—Cloth; 5 x 7½ in.; 400 pages. Seattle, Wash., The Terminal Publishing Co. $3 net.

Nut Reclaiming Machine in C. P. R. Shops.

At the C.P.R. shops at Ogden, Alta., it is the practice to remove all the nuts from the old bolts, thereby reclaiming at least 25,000 lb. a month. The accompanying plans show the machine especially got up for this purpose, which, though simple, has proved very effective. We are indebted for this information to A. T. Shortt, Superintendent of Ogden shops.



Nut Reclaiming Machine, Ogden Shops, C.P.R.

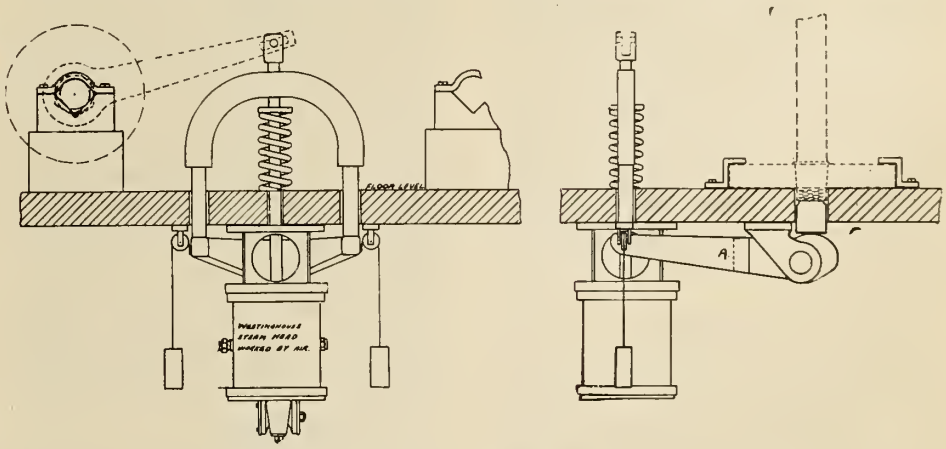


Nut Reclaiming Machine, C.P.R.

Toronto, Hamilton & Buffalo Ry. Bonds. A press report states that the Ohio Supreme Court has refused to allow the New York Central Rd. to join with the Michigan Central, Canada Southern and Canadian Pacific Railways in jointly and severally guaranteeing the payment of principal and interest on $2,000,000 of bonds of the Toronto, Hamilton & Buffalo Ry. and has ordered the Utilities Commission to modify its order. P. and C. Venner of New York, minority stockholders of the New York Central, appealed from the Utilities Commission's decision and their contention was upheld in part. The court held that the New York Central could guarantee bonds of its own companies, but not of other companies.

Piston Rod Remover in C.P.R. Shops.

The accompanying plans show a piston rod remover used at the C.P.R. shops, Ogden, Alta. It is operated by steam head and steam cylinder of 11 in. Westinghouse air pump, with compressed air. The piston head is clamped down, and between the piston rod and the eccentric arm there is a plug which takes up all slack, therefore with strokes of the pump down, a pressure of 100 tons is exerted on the end of the rod. The view of the machine with the fork end and the stand for holding the piston, shows the method of removing the piston rod nut. The opposite side of the latter sketch shows the method of applying the nut. We are indebted for this information to A. T. Shortt, Superintendent of Ogden shops.



Piston Rod Remover, Ogden Shops, C.P.R.

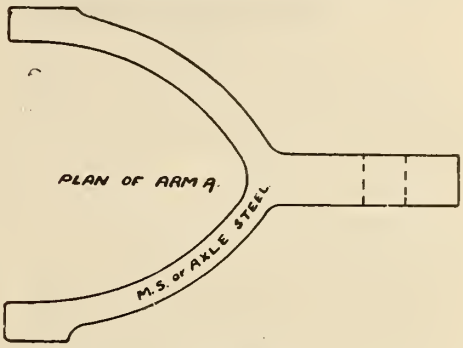
Morrissey, Fernie and Michel Ry.—The 16th annual meeting of shareholders was held at Toronto, Apr. 13. The balance carried forward from 1915 operations, together with the profits for 1916, have been set aside for depreciation. The directors were re-elected for the current year, as follows:—E. Rogers, E. C. Whitney, H. B. McGiverin, C. A. Thompson and W. H. Robinson.

Railway Rolling Stock Notes.

The C.P.R. has received 149 automobile furniture cars and 32 freight refrigerator cars from its Angus shops, Montreal.

The Timiskaming & Northern Ontario Ry. is in the market for 100 box cars, prices being asked for alternative types, and for 10 gondola cars of 80,000 lb. capacity.

The C.P.R. has ordered 10 vans, 31 steel under frame flat cars, 40 tons capacity, 159 steel underframe box cars, 40 tons capacity; 4 freight refrigerator cars, 1 steel snow plough and 1 automobile furniture car, from its Angus shops, Montreal.



Arm A, Piston Rod Remover, C.P.R.

Canadian Government Railways, in addition to the locomotives already mentioned, have ordered 30 Mikado locomotives weighing 288,000 lbs., with cylinders 27 by 30 ins.; 10 Pacific type locomotives weighing 248,000 lbs. with cylinders 23½ by 28 ins.. and 10 Santa Fe type locomotives weighing 320,000 lbs., with cylinders 26 by 32 ins., from the American Locomotive Co.

With reference to the report that the Dominion Government had purchased a number of locomotives which had been used by Welland Ship Canal contractors, for shipment to France, we are advised that no locomotives have been so purchased. Some negotiations are in progress for acquiring some of the locomotives so used, but at the time of writing no definite arrangements have been made.

Some details were given in our April issue, regarding the 3,000 cars of 1,200 poods (approximately 43,200 lbs.) capacity, which the Russian Government has ordered from the Eastern Car Co. Of these cars, 2,400 will be built with air brakes, but without platformes and hand brakes, and 600 will have platforms, hand brakes and air brakes. The axles will

have 140 by 254 m/m journals, chilled cast iron wheels, malleable iron journal boxes, M.C.B. journal bearings and wedges 5½ by 10 in., steel dust guards, elliptic springs for pedestals, open hearth steel buffers and malleable iron buffer housings, Russian style draw hook and coupling, two shutters on each side of car, and galvanized iron roof.

Canadian Government Railways have ordered an additional 50 Mikado (2-8-2) locomotives from the Canadian Locomotive Co.; 25 of these will be for use on the Intercolonial Division, and 25 on the Transcontinental Division. Following are the chief details:

Weight on drivers, in working order	213,500 lbs.
Weight in working order, total	283,000 lbs.
Wheel base, rigid	16 ft. 3 ins.
Wheel base, total	35 ft. 1 in.
Wheel base, engine and tender	68 ft.
Heating surface, firebox	242 sq. ft.
Heating surface, tubes	3,398 sq. ft.
Heating surface, total	3,640 sq. ft.
Grate area	56.6 sq. ft.
Driving wheels, diam	63 ins.
Driving wheels, centres	Cast steel
Driving journals	Main, 11 x 20 ins.; others 10 x 12 ins.
Cylinders, diar and stroke	27 by 30 ins.
Boiler, type	Extended wagon top, radial stay
Boiler pressure	180 lbs.
Tubes no. and diar.	240 2 ins.; 32 5¾ ins.
Tubes, length	20 ft.
Brakes	Westinghouse American
Superheater—Locomotive Superheater Co., Type A	
Rear frame	Cradle type
Trailing truck	Radial type with side bearings
Weight of tender, loaded	166,000 lbs.
Tank capacity	9,000 U. S. gals.
Tank, type. Water bottom with vestibule connection	
Coal capacity	12 tons
Truck, type	Pedestal, equalized
Truck, wheels, diar.	34 ins.
Wheel, type	Steel tired, retaining ring, cast steel centres
Journals	M.C.B., 6 by 11 ins.
Brake beam	High speed with M.C.B. heads

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canada Steamship Lines, Ltd.—Appointments by that company will be found in the Marine Department farther on in this issue.

Canadian Government Railways.—W. A. COWAN, M.Can.Soc.C.E., who was acting Assistant General Superintendent, Transcontinental Division, from Feb. 1 to April 1, has resumed his position as Division Engineer, and the former position has been abolished. Office, Cochrane, Ont.

M. J. SHERIDAN, heretofore Roadmaster, Hearst Subdivision, Transcontinental Division, Grant, Ont., has been appointed Roadmaster, Cochrane Subdivision, Transcontinental Division, vice G. Duff, resigned. Office, Cochrane, Ont.

W. J. COLE has been appointed Roadmaster, Hearst Subdivision, Transcontinental Division, vice M. J. Sheridan, transferred. Office, Grant, Ont.

D. W. STEEPER, heretofore passenger conductor, Graham, Ont., has been appointed acting Assistant Superintendent, District 3, Transcontinental Division, vice R. King, promoted. Office, Graham, Ont.

R. KING, heretofore Assitant Superintendent, District 3, Transcontinental Division, has been appointed acting Superintendent of that district, vice R. S. Richardson, resigned for military railway service overseas. Office, Fort William, Ont.

H. A. IRVING, heretofore Tranmaster, Sioux Lookout, Ont., has been appointed chief clerk to Superintendent, District 3, Transcontinental Division, Fort William, Ont.

Canadian Northern Ry.—W. A. CUNNINGHAM, heretofore City Ticket Agent Montreal, has been appointed Division Freight and Passenger Agent, C.N.R. and Halifax & South Western Ry., vice P. Mooney, promoted. Office, Halifax, N.S. This appointment was correctly announced in our March issue, under Halifax & South Western Ry., but owing to a misunderstanding, a wrong announcement was made in our April issue.

F. C. TURNER, heretofore Travelling Passenger Agent, Montreal, has been appointed City Passenger Agent there, vice W. A. Cunningham, promoted.

A. R. GARDNER, heretofore clerk, General Passenger Department, Montreal, has been appointed Travelling Passenger Agent, Montreal, vice F. C. Turner, promoted.

JOHN IRWIN, Superintendent, Toronto District, has had his territory rearranged, and has been given jurisdiction over the Picton, Maynooth, Irondale, Tweed and Brockville Subdivisions. Office, Trenton, Ont.

C. L. HARRIS, heretofore Assistant Superintendent, Toronto District, has been apopinted Superintendent, Toronto District, with jurisdiction over Rideau, Trenton, Muskoka and Orillia Subdivisions and Toronto Terminals. Office, Rosedale, Toronto.

G. A. HOAG, heretofore Assistant Superintendent, Trenton, Ont., has been appointed Assistant Superintendent, Toronto District, vice C. L. Harris, promoted, and his former position has been abolished. Office,

R. M. LALOR, heretofore chief clerk, Advertising Department, Toronto, has been appointed Travelling Passenger Agent, Toronto, vice H. L. McCaughey, transferred.

F. G. FLESHER, heretofore machinist at Port Mann, B.C., has been appointed Locomotive Foreman, Lucerne, B.C., vice T. C. Young, transferred.

T. C. YOUNG, heretofore Locomotive Foreman, Lucerne, B.C., has been appointed Locomotive Foreman, Port Mann, B.C., vice W. M. Armstrong, enlisted for active military service.

N. GREEN has been appointed Travelling Passenger Agent, New York, N.Y. This is a new position.

H. L. McCAUGHEY, heretofore Travelling Passenger Agent, Toronto, has been appointed Travelling Passenger Agent, Chicago, Ill.

Canadian Pacific Ry.—Hon. F. L. BEIQUE has been elected a director in place of the late Hon. Robert Mackay.

H. J. HUMPHREY, heretofore Superintendent, Laurentian Division, Quebec District, Montreal, has been appointed Superintendent, Brownville Division, New Brunswick District, vice A. Williams, transferred. Office, Brownville Jct., Me.

W. TANSLEY, heretofore acting Superintendent, London Division, Ontario District, London, has been appointed Superintendent, Laurentian Division, Quebec District, vice H. J. Humphrey, transferred. Office, Montreal.

A. WILLIAMS, heretofore Superintendent, Brownville Division, New Brunswick District, Brownville Jct., Me., has been appointed Superintendent, London Division, Ontario District, vice W. Tansley, acting Superintendent, transferred. Office, London, Ont.

F. T. ANDERSON, heretofore Assistant Local Freight Agent, Winnipeg, has been appointed General Agent, Fort William, Ont., vice C. E. Legg, whose appointment as Trainmaster, Nelson, B.C., was announced in our last issue.

D. PATERSON, heretofore in the Agricultural Agent's office, has been appointed Assistant Local Freight Agent, Winnipeg, vice F. T. Anderson, promoted.

J. H. SHEAHEN, heretofore Roadmaster, Revelstoke, B.C., has been appointed Roadmaster, Winnipeg.

W. G. McPHERSON, heretofore General Roundhouse Foreman, Moose Jaw, Sask., has been appointed Division Master Mechanic, Regina, Sask., vice S. W. Falkins, transferred.

W. M. ANSLEY, heretofore Trainmaster, Assiniboia, Sask., has been appointed Trainmaster, Regina, Sask., vice H. E. Haanel, transferred.

S. W. FALKINS, heretofore Division Master Mechanic, Regina, Sask., has been appointed Trainmaster, Assiniboia, Sask., vice W. M. Ansley, transferred.

JOHN MacRAE, heretofore Locomotive Foreman, North Bend, B.C., has been appointed Locomotive Foreman, Swift Current, Sask., vice S. Hayward, transferred.

A. E. DALES, heretofore Division Master Mechanic, Edmonton, Alta., has been appointed Division Master Mechanic, Calgary, Alta.

J. GRAHAM, heretofore Roadmaster, Nelson, B.C., has been appointed Roadmaster, Mountain West Subdivision, Revelstoke, B.C., vice J. H. Sheahen, transferred.

S. HAYWARD, heretofore Locomotive Foreman, Swift Current, Sask., has been appointed Locomotive Foreman, North Bend, B.C., vice John MacRae, transferred.

W. H. WORTMAN, heretofore Division Master Mechanic, Calgary, Alta., has been appointed Division Master Mechanic and Trainmaster, Cranbrook, B.C., vice G. Moth, whose appointment as Division Master Mechanic, Edmonton, Alta., was announced in our last issue.

G. YORK, heretofore Roadmaster, Kenora Division, Manitoba District, Winnipeg, has been appointed Roadmaster, Mountain East Subdivision, British Columbia District, vice J. Graham, transferred. Office, Golden, B.C.

Grand Trunk Ry.—L. I. STONE, heretofore Assistant Engineer, London Division, Ontario Lines, London, Ont., has been appointed Assistant Engineer, Toronto Terminals.

C. S. COYNE has been appointed Assistant Engineer, London Division, Ontario Lines, vice L. I. Stone, transferred. Office, London, Ont.

Grand Trunk Ry., Wabash Ry.—Capt. ROBERT AIKIN, heretafore master of the car ferry Detroit, has been appointed Superintendent Ferries, vice Capt. W. F. McGregor, retired on a pension. Office, Windsor, Ont.

Grand Trunk Pacific Ry.—H. A. WOODS, who has been on leave of absence since early in the year, has had his leave extended until June 1. He is staying at Mountain Lakes, N.J.

Michigan Central Rd.—J. E. JOHNSON has been appointed Division Engineer, Canada Division, vice S. D. Williams, Jr., transferred to Detroit, Mich., on special work. Office, St. Thomas, Ont.

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NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application.

ADVERTISING COPY must reach the publishers by the 10th of the month preceding the date of publication.

TORONTO, CANADA, MAY, 1917.

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Increased Freight Rates from Eastern to Western Points Suspended.

D'Arcy Scott, Assistant Chief Railway Commissioner, gave the following judgment, April 7:

The Canadian Freight Association Tariff 2 of class rates, which is C.R.C. no 1 and C.F.A. Tariff 3, of commodity rates which is C.R.C. no. 2, issued respectively Mar. 19 and 20, both effective April 23, have been filed with the Board. Both tariffs are to apply to rail, lake, and rail traffic between Toronto, Montreal, St. John, Halifax and other points in Eastern Canada, and Fort William, Port Arthur, Westfort, and stations west thereof, as specified in the tariffs. Both tariffs show increases in rates.

In framing the new tariffs the railways have not increased the proportion of the rate covering the rail haul from the head of the lakes to destination, therefore, the advances that are proposed in the new tariffs are the same to all points west of Fort William. As an example, the proposed class rates to Winnipeg and to Vancouver both show the same advance in each class. The class rates advances to all points west of Fort William are in cents per 100 lb. 1st class, 6c; 2nd class, 3c; 3rd class, 3c; 4th class, 3c; 5th class, 2c; 6th to 10th classes, 1c.. Advances ranging from 1c to 6c per 100 lb. in rates on different commodities are proposed in the commodity tariff.

Protests against these increases have been received by the Board from a number of boards of trade of western cities and the Manufacturers Association's Prairie Provinces Branch, and we are asked to suspend the tariffs until the railway companies have justified the proposed increase and the organizations which are protesting have an opportunity of being heard. The railway companies' answer to the request for suspension is set out in the following extract from a letter from E. W. Beatty, Vice President and General Counsel, C.P.R., to the board, dated April 5. He says:

"As previously explained to the board, these tariffs include the local Fort William class and commodity rates, which were filed by the various railway companies with the board, effective April 2, and approved after hearing by the board. In so far as the rates beyond Fort William are concerned, no change whatever is made, and, therefore, the basis of justification of the increases in the present case is exactly the same as that already approved by the board in the judgment referred to. In other words, the rail carriers in this case are simply acting on the well settled principle that it is competent for them to disregard water competition, either altogether, or to such extent as they may see fit, and in view of the number of times that this principle has already been upheld by the board, it is submitted that the board would not be justified in suspending the tariffs."

The board had before it at a sitting at Ottawa on Mar. 20 the new rail and lake tariffs of the railway companies showing an increase in local rates to Fort William, effective April 2. These tariffs were not approved, as suggested by Mr. Beatty; but the board, after hearing those interested, decided that it should not interfere with the tariffs, and the new rates were allowed to become effective. The reasons for the board coming to that conclusion are set out in my memorandum of Mar. 29. The board's action in the local rail and lake rates case should not be taken by the railway companies as a justification for the increase in rail lake and rail rates to western points. There may be principles applicable to the proposed western rates, or circumstances and conditions to be considered, which had no application to the local rates to Fort William. We should not prejudge the case. We must wait till the parties interested have been heard. This board has always followed the practice of allowing an opportunity for every one likely to be prejudicially affected by an increase in rates to be heard before the rates are allowed to become effective. I think we should follow that practice in this case, and suspend the tariffs till after the board hold sittings in the west, so that those affected may have an opportunity of being heard.

It is a pity the railway companies do not file important tariffs like those before us, which are likely to be questioned, in ample time to allow them to be discussed before the board before the effective dates named in the tariffs. Tariff 2 was received on Mar. 19th, and Tariff 3 on Mar. 23, by the board's traffic department. Sittings of the board were held at Regina on Mar. 15, and at Winnipeg on Mar. 16. We might have heard complaints at those, and other western points if the board and the public had only had notice of the railway companies' intentions. If the railway companies are inconvenienced by the suspension of these tariffs, it is entirely due to their own tardiness. It has been brought to our attention that copies of these tariffs were not sent to the boards of trade in the west, and that some of those affected first learned of the proposed increase from the newspapers. The board has taken up with the Canadian Freight Association the question of prompt notice of tariffs, like those before us, being given to organizations of shippers, or consignees, which are specially concerned with freight rates. Some arrangement will be made whereby these organizations will receive due notification in such cases in the future. We were told at the Ottawa sitting on Mar. 20 by a representative of one of the railway companies, that the railway companies contemplated filing tariffs shortly, increasing all rail rates from eastern to western points. If this is the intention, it would be well for the railway companies to file these all rail tariffs without delay, so that if any objections are to be made to them the parties objecting can be heard at the western sittings which it will be necessary for the board to hold to consider the tariffs now before us. An order should now go suspending C.F.A. Tariffs C.R.C. 1 and 2.

Northern New Brunswick & Seaboard Ry.—A subscriber has asked for information about this line. It extends from Nepisiquit Jct., on the Intercolonial Ry., 3.4 miles east of Bathurst, N.B., to Bathurst Mines, 16.9 miles, and was built to convey iron ore from the mines to the seaboard, but it is not now in operation. A gasoline car was operated last year for passenger service, but this was discontinued during the winter and has not been resumed. The officials are Edgar McDougall, Montreal, President; Andrew Whyte, Jr., Montreal, Secretary Treasurer; and W. F. C. Parsons, Middleton, N.S., General Manager.

Canadian Pacific Railway Company's Six Months Report.

Following is the directors report for the half year ended Dec. 31, 1916:

The accounts show the following results:

Gross earnings	$76,717,965.36
working expenses	45,843,199.50
Net earnings	$30,874,765.86
Deduct fixed charges	5,132,551.09
Surplus	$25,742,214.77
Contribution to pension fund	200,000.00
	$25,542,214.77
Deduct net earnings of Pacific coast steamships, commercial telegraph, and news department, transferred to special income account	1,144,071.44
	$24,398,143.33
Froh this there has been charged a quarterly dividend on ordinary stock of 1¾%,pain Jan. 2, 1917.	$4,550,000.00
	$19,848,143.33
From this there has been declared the half-yearly dividend on preference stock of 2%, payable Mar. 31, 1917... $1,613,638.42	
And a second quarterly dividend on ordinary stock of 1¾%, payable Mar. 31, 1917.... 4,550,000.00	
	6,163,638.42
Leaving net surplus for the six months	$13,684,504.91

In addition to the above dividends on ordinary stock, 1½% was paid from special income.

Details of Special Income for Six Month.

Balance at June 30, 1916	$10,357,099.09
Less dividend paid Sept. 30, 1916	1,950,000.00
	$8,407,099.09
Intrest on proceeds land sales	191,783.02
Interest on deposits and loans	898,068.07
Interest from Minneapolis, St. Paul & S. S. Marie Ry. bonds	79,860.00
Interest from Mineral Range Ry. bonds	25,080.00
Interest from Berlin, Waterloo, Wellesley & Lake Huron Ry. bonds	8,520.00
Interest from St. John Bridge & Extension Co. bonds	3,125.00
Interest from Esquimalt & Nanaimo Ry. bonds	96,640.00
Interest from Dominion Atlantic Ry. extension debenture stock	28,470.00
Interest from Dominion Atlantic Ry. 2nd debenture stock	18,493.34
Interest from Hull Electric Ry.	20,000.00
Dividend on Domnion Express Co. stock	100,000.00
Dividend on St. John Bridge & Railway Extension Co. stock	35,000.00
Dividend on Minneapolis, St. Paul & S. S. Marie Ry. common stock	445,322.50
Dividend on Minneapolis, St. Paul & S. S. Marie Ry. preferred stock	222,633.00
Dividends on West Kootenay Power & Light Co. preferred stock	1,925.00
Dividends on Consolidated Mning & Smelting Co. stock	178,243.75
Dividend on Berlin, Waterloo, Wellesley & Lake Huron Ry. stock	6,250.00
Dividends on Toronto, Hamilton & Buffalo Ry. stock	27,553.50
Earnings from ocean steamships and hotels	2,546,249.48
Revenue from company's interest in coal mine properties	182,362.75
Extraneous mail earnings	79,042.85
Net earnings of Pacific Coast steamships, commercial telegraph, news department	1,144,071.44
Received for space rented in office buildings	40,158.67
	$14,822,451.54
Less: Payment to shareholders in dividend, Jan. 2, 1917	1,950,000.00
	$12,872,451.54
From this a dividend has been declared, payable Mar. 31, 1917	1,950,000.00

The working expenses for the six months were 59.75% of the gross earnings, and the net earnings 40.25% compared with 55.43 and 44.57% respectively, in 1915.

Under the Interstate Commerce Commission regulations railway companies in the United States are now required to make their fiscal year correspond with the calendar year, and it is understood that at the present session of the Dominion Parliament similar legislation will be passed with reference to railway companies in Canada. In order to conform to this requirement, which has the merit of facilitating the comparison of the cost of operations and other statistics, your directors recommend that Dec. 31 in each year be made the end of the company's fiscal year instead of June 30, as heretofore, and with this change in view your directors have adopted a by-law, which you will be asked to approve, changing the date of the annual general meeting of shareholders from the first Wednesday in October to the first Wednesday in May. The financial reports and accounts now submitted for your consideration cover the six months ended Dec. 31, 1916, and, therefore, the next annual report and statements to be placed before you a year hence will embrace the operations of the calendar year 1917.

You will also be asked to give your sanction to amendments to bylaws 47 and 49, providing for the issue of the company's 4% consolidated debenture stock and 4% preference stock, in dollar currency denominations as well as in sterling money of Great Britain. With the assent of your company the British Treasury included, among the securities which were being borrowed in Great Britain, the various outstanding obligations of your company, and these obligations have already been used, to some extent, for the purpose of pledge in New York, as security for the obligations of the United Kingdom of Great Britain and Ireland. It became evident, however, that the obligations of your company, being to a large extent issued in a currency foreign to the American market, could be more advantageously utilized if put in a form familiar to American investors. The need of the British Treasury for securities to obtain dollars has been imperative to carry on the war, and your company has felt it not only a duty to be of assistance in this situation, but also a privilege, in view of the present position of your company having been in a large part due to the investment of British capital ever since its formation. No company in the British Empire stands in higher credit among American investors than the C. P. R. Co., and his Majesty's Government had the assurance that your company's obligations, if offered in a form suitable to the American market, could be readily sold in the United States in large amounts and at a favorable price. Acting under an understanding with your company, the Yords Commissioners of His Majesty's Treasury have decided to take over or acquire, under their general powers in that behalf, or under regulations made pursuant to the Defence of the Realm Consolidation Act of 1914 and amending enactments, from all persons ordinarily resident in the United Kinidom, their outstanding holdings of Canadian Pacific 4% consolidated debenture stock, Atlantic and North West 1st Mortgage 5% bonds, Algoma Branch 1st mortgage 5% bonds, and Ontario and Quebec 5% debenture stock, which the Imperial Government proposes to lodge with your company in exchange for such an amount of 20-30 year 5% collateral trust bonds of the C.P.R. Co. in dollar form as will equal, at par, the value, on a 5% basis, of the securities received from the Treasury calculating the pounds sterling at the rate of £21 to $100. If all of the above four issues should be acquired and deposited, your company would issue $198,979,580 of bonds, payable as to principal and interest in gold in dollars in New York or Montreal at the option of the holder, with a fixed maturity of 30 years, but redeemable at par at the option of your company on and after the expiration of 20 years. It is also provided that the bonds may be redeemed, if requested by the Government, at 105 and interest, at any time within the first five years of their life. The pledged collateral will be lodged at the specific prices of 80 for the Canadian Pacific 4% debenture stock and at par for the above mentioned 5% securities. Under the proposed arrangement the annual fixed charges of your company will remain as they are at present, interest on the collateral trust bonds being covered by interest on the securities deposited as collateral, and, although your company is taking liability for repayment on a specified date, that liability is covered by an undertaking of the Imperial Government to provide the funds required for redemption of the bonds in whole or in part during the first five years, or after 20 years or at maturity, as may be determined. Included in the 4% consolidated debenture stock that the Imperial Government proposes to acquire and deposit is the $40,000,000 recently issued by your company and loaned to the British Treasury, which the Imperial Government will purchase at 83% of its face value, the proceeds of the sale, viz., $32,000,000, to be loaned to the Imperial Treasury for five years at an annual interest rate of 5¼%, payable semi-annually. The company was not empowered by existing legislation to issue securities of the character described, and, therefore, application has been made to the Dominion Parliament for the requisite statutory authority. As no interest is injuriously affected, and your company is amply safeguarded, your directors commend to your favorable consideration and approval the formal agreement between the Imperial Government and your company which will be submitted to you at the special general meeting, and ask you to authorize and approve the creation and issuance of collateral trust bonds, pursuant to the terms of the agreement, and approve the form of trust deed to be given to secure the holders of such bonds as may be issued, and to do whatever else may be necessary to carry the provisions of the agreement into effect.

The sales of agricultural land during the half year were 328,574 acres for $5,295,345, an average of $16.12 an acre. Included in this area were 8,852 acres of irrigated land which brought $49.78 an acre, so that the average price of the balance was $15.18 an acre.

Acting upon the authority received from you in 1914, your directors have purchased practically all of the stock of the Spokane International Ry. Co., at a cost of about $2,500,000, the former owners having liquidated all of the floating liabilities, so that the property is free from indebtedness excepting the outstanding bonds.

An ocean steamship of 9,400 tons carrying capacity, and a speed of 13 knots, now under construction at Newcastle-on-Tyne, has been purchased at a cost og £240,000 for delivery in July or August. This will make the tonnage of your ocean fleet practically the same as it was before the outbreak of war, but to provide for future requirements and to secure the advantage of the earliest construction

that circumstances will permit, an arrangement has been made under an agreement with John Brown & Co., the Fairfield Shipping and Engineering Co., and Harland & Wolff, Ltd., for the building, on a cost and percentage basis, of two steamships 605 ft. long between perpendiculars with a speed of 20 knots an hour, and two steamships 546 ft. long between perpendiculars with a speed of 16 knots an hour.

Connaught tunnel, at the summit of the Selkirk Mountains, has been completed and is now in successful operation. Your directors are satisfied that increased safety and economy in the operation of that portion of your railway will more expenditure involved in the work. The estimated value of 15 miles of railway abandoned by reason of the construction of the tunnel, viz., $1,665,000, has been charged against revenue, thus reducing the capital account by that amount.

The yield of the harvest last autumn and the general business of the country, substantially exceeded anticipations, and the result is reflected in your gross and net income during the half year.

Anticipating your approval, capital expenditure has been authorized in the current year to the amount of $4,178,775. Of this, additional wharf accommodation and other facilities at Vancouver will absorb $841,000; shops, stations and other buildings, $397,000; transfer tracks, crossing sidings and enlargement of yards, $792,000; craft for coastal service, $134,000; telegraph lines, $82,000; and the balance is required for a variety of additions and improvements over the whole system.

Your directors regret to announce the death in December last of their esteemed colleague and friend, Hon. Robert Mackay, who had been a member of the Board since 1903. Hon. F. L. Beique, K.C., senator, of Montreal, has been elected a director to fill the vacancy in the board. The undermentioned directors will retire from office at the approaching annual meeting. They are eligible for re-election: E. W. Beatty, K.C., Hon. F. L. Beique, K.C., Jas. Dunsmuir, C. R. Hosmer.

Investigation Into Pacific Great Eastern Railway Affairs.

A special committee appointed by the British Columbia Legislature to make an investigation into all matters connected with the financing of the Pacific Great Eastern Ry. commenced its sittings Mar. 15, when J. W. de B. Ferris, of Vancouver, was appointed chairman. The taking of evidence was begun Mar. 20, and the sittings have been continued regularly. On Mar. 27 the first report of 478 pages of evidence was submitted, which the Legislature ordered to be printed.

In brief, the story of the company is that on Feb. 10, 1912, an agreement was entered into between the then British Columbia Government and the international contracting firm of Foley, Welch and Stewart to build a railway from Vancouver to a junction with the Grank Trunk Pacific Ry at Prince George, the railway bonds to be guaranteed by the province. The Pacific Great Eastern Ry. Co. was incorporated by the B. C. Legislature, T. Foley, St. Paul, Minn; P. Welch, Spokane, Wash., J. W. Stewart, D'Arcy Tate, D. McLeod, and V. W. Smith, Vancouver, being incorporators. Foley, Welch and Stewart subsequently sold their contract with the government to the P. G. E. Ry. Co. for $1 and the company entered into a general contract with P. Welch, to build the line on a cost plus 15% basis, the constructor having certain privileges as to keeping stores, hauling and transporting freight, etc. Smith and McLeod retired fro mthe directorate, their places being taken by F. Wilson and E. White, and P. Welch also retired before the contract was let to him. The original capital of $25,000,000, of which 100 shares were subscribed for and on which $40,000 was paid up in cash, was divided as follows: 31,865 shares each to Foley, Welch, Stewart and D'Arcy Tate; 20 shares each to White and Wilson to qualify them as directors; 102,500 pledged to a bank, and 20,000 pledged to the B.C. Government as part security for the $6,000,000 loan of 1916. The capital of the company was subsequently raised to $40,000,000 by an order in council, and at the 1914 session of the legislature the guarantee of the company's bonds ,which had originally been at the rate of $35,000 a unit, was increased by an additional $7,000 a mile, for 480 miles. In the same year authority was given to the government to enter into an agreement with the company to build a line from Prince George to Peace River, 330 miles, on a guarantee of bonds for $35,000 a mile. In 1916 the government agreed to lend the company $6,000,000 to enable it to complete the line to Prince George.

Engineers, auditors, and others gave evidence as to general facts about the company, the specifications used in connection with the construction, the quantity of materials used, and the quantities paid for, the alleged over charging, etc. It was not until April 13, however, that the evidence began to develop somewhat sensational tendencies. On that day D'Arcy Tate, Vice President and General Counsel, stated that he had received $500,000 in cash for his services in connection with negotiation with the Grand Trunk Pacific Ry., and the government, out of which he was to take care of the campaign funds so far as the government party was concerned. Mr. Tate is reported to have added: "We all know that these contributions are customary. I have made contributions to campaign funds for the past 15 years." Mr. Tate was asked by the Committee to give details of how he had expended this money, but he declined to do so on the ground that it was a payment to him by Stewart out of his own private funds, and had nothing to do with the funds of the P.G.E. Ry. The committee having considered the matter, decided to ask the legislature for authority to compel Mr. Tate to answer any questions that might be put to him upon the subject. This resolution was passed by the Legislature April 16, and when the committee resumed its sittings, April 17, it was stated that Mr. Tate declined to appear further before the committee and had gone to Seattle, Wash. It was also stated that P. Welch had left Vancouver, to Spokane, Wash. On resuming the hearing of evidence R. S. Thomas, Secretary of the Company, stated that he knew of three cheques amounting to $115,000 which had been used for campaign purposes, but he declined to say to whom the money went, and on persisting in refusing the matter was reported to the legislature, which on April 18, summoned him to the bar of the House. He there reaffirmed his decision not to answer further question on the matter, and was committed to the custody of the Sergeant-at-arms, during the pleasure of the house. On April 20, R. J. Cromie, of the P. G. E. Ry office, told the committee that all J. W. Stewart's private check books, etc., relating to a fund of $763,000 had disappeared from the company's offices. Other witnesses who were to have been examined were not present, and the committee is considering what to do in the matter. E. P. Davis, K.C., on behalf of the Foley, Welch and Stewart interests, said that his clients were prepared to hand over all their holdings in the P. G. E. Ry. and the subsidiary companies, and were also prepared, if the government wished, to undertake completion of the line under Government management. They would be willing to do this if the government would release the company and its members from their obligation and personal covenant to complete the line.

Mr. Hanes, the North Vancouver member of the committee, gave notice that he would move a resolution which will probably form the basis of the recommendations of the committee to the legislature. He proposes that the government take immediate steps to cancel the 24,950,000 shares of capital stock in the company, that the government cancel the contract with the company for the construction of the line; that suits be entered against the Pacific Great Eastern Ry. and Foley, Welch & Stewart for the return of the guarantees alleged to have been overpaid; that the P. G. E. Ry. be sued for directors' profits and subscriptions; that P. Welch be sued for excess payments made under wrongful classification; that legislation be enacted to take over the construction and ownership of the railway as a government line; and that tenders be advertised for its completion. The possibility of criminal prosecutions in connection with the matter will, it is said, be taken up by the committee later.

United States Railway Organization for the War.

Representatives of the American Railway Association, including the presidents of the leading roads in the United States, met in New York, April 12, at the call of the Council of National Defence and named a board of five to direct the operation of U. S. railways throughout the war. The members of the board are Fairfax Harrison, of the Southern Ry., chairman; Howard Elliott, of the New York, New Haven and Hartford; Samuel Rea, of the Pennsylvania; Hale Holden, of the Chicago, Burlington & Quincy; and Julius Kruttschnitt, of the Southern Pacifis. Daniel Willard, of the Baltimore & Ohio, who is also chairman of the Defense Council's Advisory Commission, will be an ex-officio member of the board. The interstate Commerce Commission will be asked to name another member.

Mr. Harrison announces that the general committee will be divided into six departments, each to correspond with one of the military departments of the army. The six subcommittees will include 28 railway executives, whos work will be supervised by the central executive committee of five.

Canadian Transportation Men, Engineers, Etc. in the War.

Inland Water Transport.—It is said that over 80% of the Royal Engineers' inland water transport section, the new Imperial unit authorized to be recruited in Canada, is made up of men from British Columbia.

Signal Flags for French Railways.—The Moncton, N.B., General Patriotic League are engaged in making flags, similar to those in use on the Canadian Government Railways, for use on military railways in France, which are under the charge of Canadians. It reported that 100 dozen of these flags had been completed by April 20.

Arrivals in England.—It was officially announced, April 8, that the following troops had arrived safely from Canada: The 256th Overseas Railway Construction Battalion, under command of Lt. Col. W. A. McConnell, and which is composed largely of civil engineers, surveyors, contractors and railway construction men; No. 2 Construction Battalion, under comman of Lt. Col. Donald Sutherland, railway contractor, and an Inland Water Transport section.

Timiskaming and Northern Ontario Ry.—Ninety-one employes of the railway had joined the Canadian Expeditionary Forces to Oct. 31, 1916, representing 10% of those engaged in the service. The commission gave a bonus to those enlisting, the amount paid out to Oct. 31, being $11,598.66. The commission has voted $10,000, and the employes have subscribed $12,064.52 to the Canadian Patriotic Fund. The employes have also contributed $10,245.36 for Red Cross purposes.

PERSONAL NOTES.

W. M. Armstrong, Locomotive Foreman, Canadian Northern Ry., Port Mann, B.C., has enlisted for active military service.

Malcolm MacLeod, son of M. H. MacLeod, General Manager and Chief Engineer, Canadian Northern Ry., Winnipeg, has joined the Royal Flying Corps, at Camp Borden, Ont.

Major G. A. E. Bury, son of George Bury, Vice President, C.P.R., has been gazetted in England as Deputy Assistant and Quartermaster General, Canadian Expeditionary Force.

Major B. M. Humble, general list, has been gazetted in England as Lieutenant Colonel, while employed as officer in charge of headquarters for Canadian railway troops.

Acting Lt. Col. B. R. Hepburn, M.P., formerly President, Lake Ontario & Bay of Quinte Steamship Co., Picton, Ont., has been gazetted in England as Colonel while employed as Deputy Director of Timber Operations.

G. McL. Brown, European Manager, C.P.R., London, Eng., has, according to a press cable, been appointed to the staff, as a lieutenant colonel and will go to France to superintend wharves and docks for the British army.

Lt. Col. G. C. Royce, General Manager, Toronto Suburban Ry., commanding the 255th Overseas Battalion, Queen's Own Rifles, Toronto, has been appointed to command the Queen's Own Battalion of the Canadian Defence Force, which is being raised for home service.

Capt. W. S. MacTier, of the Canadian Infantry, son of A. D. MacTier, General Manager, Eastern Lines, C.P.R., Montreal, has been wounded a second time. He was first wounded in the foot by shrapnel in May, 1915. His casualty is a compound fracture of the thigh.

Honorary Colonel W. I. Gear, Vice President, the Robert Reford Co., Ltd., shipping agents, etc., Montreal, has taken charge of recruiting for a battalion of the 1st Canadian Regiment, Grenadier Guards, which is to be raised in the Montreal district as part of the Canadian Defence Force.

J. W. Stewart's Work.—London, Eng., cablegram, April 8: In an article in the Weekly Dispatch dealing with transport questions in Mesopotamia, General Sir O'Moore Creagh incidentally says that the sending out to France of that wonderful Canadian hustler, Lt. Col. Stewart, was a splendid stroke.

Major Ian M. R. Sinclair, of the Canadian Infantry, son of Angus Sinclair, railway contractor, Toronto, was reported April 7 to have been slightly wounded in action. This is the fourth time his name has appeared in the casualty lists. He was wounded in the battle at the Orchard in May, 1915, and again in May 1916, and subsequently was reported as suffering from shell shock.

Col. Sir John Norton Griffiths, K.C.B., D.S.O., of the Norton Griffiths Construction Co., which formerly held the contract for harbor improvement work at St. John, N.B., has been decorated with the Star of Rumania, with the rank of commander, with swords, by the King of Rumania, in recognition of his services to the army in connection with the destruction of borings in the Rumanian oil fields.

A press cable from England, referring to the opening, by Princess Victoria, of a recreation hut in the Canadian Forestry Camp at Windsor, which was built by the Forestry Corps in seven days, mentions **Lt. Col. Penhorwood** as being present. He was formerly Manager of New Ontario Dock Co. and agent, G.T.R. at Sault Ste. Marie, Ont., and was given command of the 51st Regiment, Sault Ste. Marie Rifles, which he raised.

Reuben S. Richardson, Superintendent, District 3, Transcontinental Division, Canadian Government Railways, Fort William, Ont., has resigned to go overseas, as Lieutenant in No. 2 Section, Skilled Railway Employes. He was born at Napanee, Ont., Apr. 9, 1865 and entered transportation service in 1878, since when, in 1884, he filled various positions from messenger to freight clerk, operator, ticket clerk, switchman and baggage master, Canadian Express Co. and G. T. R., at various points; 1884 to 1887, brakeman, conductor, station agent and Soliciting Freight and Passenger Agent, Bay of Quinte Ry., at various points; 1897 to 1901, brakeman, conductor and Terminal Yardmaster, Canada Atlantic Ry., Ottawa; 1901 to 1907, General Yardmaster and acting Trainmaster, C.P.R., Smiths Falls and North Bay, Ont.; 1907 to 1911, Assistant Superintendent, Canadian Northern Ry., Montreal, Quebec and Ottawa; 1911 to 1913, Superintendent of Operating and Construction, MacDonnell and O'Brien, contractors on the National Transcontinental Ry., La Tuque, Que., 1913 to May 1915, General Yardmaster of Terminals and Assistant Superintendent, Intercolonial Ry., Halifax, N.S., Moncton and St. John, N.B., and from May 1915 to Mar. 27, 1917, Superintendent, District 3, Transcontinental Division, Canadian Government Railways, Fort William, Ont.

Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending April 13, 1917.	Wheat. bushels.	Oats. bushels.	Barley. bushels.	Flax. bushels.	Totals. bushels.
Fort William—					
C.P.R.	4,746,401	2,066,815	247,471	.....	7,060,687
Consolidated Elevator Co.	1,083,769	220,348	75,491	168,736	1,548,344
Empire Elevator Co.	918,733	309,342	36,639	233,746	1,498,460
Ogilvie Flour Mills Co.	1,095,013	192,325	38,699	.....	1,326,037
Western Terminal Elevator Co.	1,001,631	193,908	32,867	551,215	1,779,621
G. T. Pacific	3,257,323	2,193,355	141,216	83,985	5,675,879
Grain Growers' Grain Co.	1,293,851	606,920	98,205	.....	1,998,976
Fort William Elevator Co.	882,915	445,003	25,729	60,930	1,414,577
Eastern Terminal Elevator Co.	1,100,712	510,589	46,392	.....	1,657,693
Thunder Bay Elevator Co.	740,170	241,561	49,054	62,743	1,093,528
Port Arthur—					
Port Arthur Elevator Co.	4,682,680	2,500,913	416,509	161,813	7,761,916
D. Horn & Co.	311,493	114,709	28,620	151,700	606,522
Dominion Government Elevator	1,944,344	544,349	81,487	149,401	2,769,581
Grain afloat	89,245	101,331	.....	.....	190,576
Total terminal elevators	23,198,280	10,241,468	1,318,379	1,624,270	36,382,397
Saskatoon Dom. Govt. Elevator	1,676,797	666,213	31,664	157,367	2,532,041
Moose Jaw Dom. Govt. Elevator	2,152,093	747,381	24,083	102,318	3,025,875
Calgary Dom. Govt. Elevator	862,783	1,236,548	114,976	12,206	2,226,513
Vancouver Dom. Govt. Elevator	1,100	58,650	.....	.....	59,750
Total interior terminal elevators	4,692,773	2,708,792	170,723	271,891	7,844,177
Depot Harbor	.....	56,715	.....	.....	56,715
Midland—					
Aberdeen Elevator Co.	.....	50,535	.....	.....	50,535
Midland Elevator Co.	5,961	.....	.....	.....	5,961
Tiffin, G.T.P.	17,935	192,616	.....	.....	210,551
Port McNicoll	316,571	190,979	25,830	.....	533,380
Collingwood	.....	65,405	.....	.....	65,405
Goderich	129,614	57,587	.....	.....	187,201
Western Canada Flour Mills Co.	34,780	11,967	.....	.....	46,747
Kingston—					
Montreal Transportation Co.	.....	144,992	.....	.....	144,992
Commercial Elevator Co.	9,353	34,663	.....	.....	44,016
Port Colborne	15,184	279,403	.....	.....	294,587
Montreal—					
Harbor Commissioners no. 1	61,340	193,413	24,525	.....	279,278
Harbor Commissioners no. 2	365,482	387,874	66,308	.....	819,664
Montreal Warehousing Co.	8,200	434,264	83,819	.....	526,283
Quebec Harbor Commissioners	4,168	152,888	1,247	.....	158,303
West St. John, N.B.	188,344	22,166	25,155	.....	235,665
Halifax, N.S.	410	.....	.....	.....	410
Total public elevators	1,157,342	2,275,467	226,884	.....	3,659,693
Total quantity in store	29,048,395	15,225,727	1,715,986	1,896,161	47,886,269

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St. John and Quebec Ry.—We are officially advised that some surveys have been made with the object of securing a connection with the Maine Central Rd. at or near Bancroft, Me. The starting point of the branch line would probably be Meductic, a station on the St. J. and Q. Ry., mileage 50.4 from Fredericton, N.B. The project is not yet sufficiently advanced to be regarded as finally decided upon. (See also Maine Central Rd.) (April, pg. 136.)

We are officially advised that a subsidy agreement has been entered into upon the regular statutory conditions between the Dominion Government and the St. John and Quebec Ry. for the construction of the following lines: From Andover to Centreville, 26 miles; from Centreville to Gagetown, 120 miles, and from Gagetown to the C.P.R. at Westfield, 45 miles. The Centreville-Gagetown line is complete and is being operated by the Canadian Government Railways as an Intercolonial Ry. branch; the Gagetown-Westfield section is under construction, and a contract has just been let for building the Andover-Centreville section.

The St. Maurice Lumber Co. has been incorporated by the Quebec Legislature with office at Three Rivers, and power, among other things, to build and operate a railway. The company has power to take over the property contracts and rights of the St. Maurice Lumber Co. which has its head office in New York. It is also authorized to build a dam or dams on the St. Maurice River, in the vicinity of Des Forges rapids, on the Bastican River near Notre Dame des Anges; and on the Pentecost River, near Pentecost Village, to develop the same, and distribute electric power therefrom within the limits of Champlain and St. Maurice. Three Rivers, Portneuf and Saguenay Counties; to construct wharves and docks within the same area, and to operate steam and other vessels on any navigable water therein; and to build railways or tramways to connect the company's mills and industrial establishments with the C.P.R., the Canadian Northern Ry., or any other railway passing through the counties named. (April, pg. 106.)

Saskatchewan and Hudson Bay Ry.— It has been explained that this is the Saskatchewan provincial section of a railway projected from the southern boundary of Alberta, adjoining the State of Washington, to run through Alberta and Saskatchewan. The company has a Dominion charter to build the entire line, and provincial charters for the several sections. The S. and H. B. Ry. was given incorporation to fix the point of entry into Saskatchewan, which is to be at a different point than that contemplated when the Dominion act was obtained. It is reported that the farmers settled in a considerable stretch of country through which the line is projected have entered into an agreement to provide $4,000 a mile toward the cost of construction. (April, pg. 166.)

Springfield, N.S. — A press report states that the Davison Lumber Co., Bridgewater, N.S., propose to build 12 miles of railway in connection with the development of certain timber limits at Springfield, N.S.

Toronto, Hamilton and Buffalo Ry.— The Hamilton Board of Works has approved of the building of an industrial spur by the company to the National Abrasive Co.'s premises at the corner of Biggar Av. and Lottridge St., Hamilton, Ont. (Feb., pg. 51.)

Dominion Railway Act Revision. The special committee appointed by the House of Commons to revise and consolidate the Railway Act, met in Ottawa, April 12, under the chairmanship of J. E. Armstrong. The work of consolidation was started about three years ago by S. Price, K.C., acting as special counsel for the Department of Railways, and was completed by Strachan Johnston, K.C. The revised bill contains 456 sections and clauses.

Timiskaming & Northern Ontario Railwaymen's Patriotic Association.—In addition to subscriptions by the commissioners and the office staff, the staff all being members of the 50,000 Club, Toronto, the employes, to Jan. 1, have subscribed $16,721.71 to the Red Cross; $23,-169.55 to the Canadian Patriotic Fund, and $10,754.21 to enlisted employes direct.

Freight and Passenger Traffic Notes.

The C.P.R. is said to be arranging to put a daylight passenger train on its Crowsnest Pass line to run between Lethbridge and Cranbrook.

W. A. Cunningham, Division Freight and Passenger Agent, Halifax and Southwestern Ry. has been authorized by the Board of Railway Commissioners to prepare and issue freight and passenger tariffs of every description for the railway and any vessels it may control or operate.

Jas. Orr, General Freight Agent, Canadian Northern Ry., has been authorized by the Board of Railway Commissioners to prepare and issue tariffs in respect of the tolls upon freight traffic of every description to be charged by the company, for all freight traffic that may be carried upon its railway, or any part of its system, excepting to and from points west of Port Arthur or Westfort, Ont.

There will be some increase in the number of passenger trains on the Canadian Pacific, the Grand Trunk Ry., the Canadian Northern Ry., and the Intercotional Railway, with the usual May change of schedules, although the number of trains in operation prior to November last, when the big cut was made, will not be restored. It is expected that the number of passenger trains will be restored to the usual summer schedule by June or July.

It was announced, April 16, that the G.T.R. had placed an embargo on all carload freight for export via Montreal, except freight consigned to the Imperial Government, and also in cases where specific steamship space has been secured, and acceptance authorized by the General Foreign Freight Agent at Montreal, or the Assistant Foreign Freight Agent at Toronto. The C.P.R. has modified its embargo against freight traffic in Montreal terminals, except Cote St. Paul.

The C.P.R. has arranged to run an inter-hotel train, daily, in each direction, between Calgary and Clacier, during the tourist season, from about June 30 to Sept. 8, leaving Calgary at 7.20 a.m. and arriving at Glacier at 6 p.m. Eastbound, Glacier will be left at 8 a.m. and Calgary reached at 8.45 p.m. The equipment will be baggage car, first class car, three parlor cars and an open top observation car; this car being open on both sides and without a roof. The train will be hauled by an oil-burning locomotive. A stop of one hour will be made at Field for luncheon.

The Edmonton, Dunvegan and British Columbia Ry. is operating from Edmonton to Spirit River, 367 miles, of which 357 miles is over its own tracks. The company operates for the first 10 miles over the Grand Trunk Pacific Ry. under an agreement, pending the laying out of its own terminals in Edmonton. It has built one branch, viz., from Spirit River to Grand Prairie, 49.8 miles, making a total of 406.8 miles in operation. Under the title of the Central Canada Ry, there have been built by the J. A. McArthur interests, 48.5 miles of railway from McLennan to Peace River, on which the company is operating a train service, thus making 455.3 of line actually being operated as independent railways. The third line in which the same contracting firm is interested is the Alberta and Great Waterways Ry., which has a present total length of 290.2 miles from Carbondale Jct., 14.7 miles from Edmonton, to McMurray. The contractors are operating a train service over a section of this line.

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St. John and Quebec Ry.—We are officially advised that some surveys have been made with the object of securing a connection with the Maine Central Rd. at or near Bancroft, Me. The starting point of the branch line would probably be Meductic, a station on the St. J. and Q. Ry., mileage 50.4 from Fredericton, N.B. The project is not yet sufficiently advanced to be regarded as finally decided upon. (See also Maine Central Rd.) (April, pg. 136.)

We are officially advised that a subsidy agreement has been entered into upon the regular statutory conditions between the Dominion Government and the St. John and Quebec Ry. for the construction of the following lines: From Andover to Centreville, 26 miles; from Centreville to Gagetown, 120 miles, and from Gagetown to the C.P.R. at Westfield, 45 miles. The Centreville-Gagetown line is complete and is being operated by the Canadian Government Railways as an Intercolonial Ry. branch; the Gagetown-Westfield section is under construction, and a contract has just been let for building the Andover-Centreville section.

The St. Maurice Lumber Co. has been incorporated by the Quebec Legislature with office at Three Rivers, and power, among other things, to build and operate a railway. The company has power to take over the property contracts and rights of the St. Maurice Lumber Co. which has its head office in New York. It is also authorized to build a dam or dams on the St. Maurice River, in the vicinity of Des Forges rapids, on the Bastican River near Notre Dame des Anges; and on the Pentecost River, near Pentecost Village, to develop the same, and distribute electric power therefrom within the limits of Champlain and St. Maurice. Three Rivers, Portneuf and Saguenay Counties; to construct wharves and docks within the same area, and to operate steam and other vessels on any navigable water therein; and to build railways or tramways to connect the company's mills and industrial establishments with the C.P.R., the Canadian Northern Ry., or any other railway passing through the counties named. (April, pg. 106.)

Saskatchewan and Hudson Bay Ry.— It has been explained that this is the Saskatchewan provincial section of a railway projected from the southern boundary of Alberta, adjoining the State of Washington, to run through Alberta and Saskatchewan. The company has a Dominion charter to build the entire line, and provincial charters for the several sections. The S. and H. B. Ry. was given incorporation to fix the point of entry into Saskatchewan, which is to be at a different point than that contemplated when the Dominion act was obtained. It is reported that the farmers settled in a considerable stretch of country through which the line is projected have entered into an agreement to provide $4,000 a mile toward the cost of construction. (April, pg. 166.)

Springfield, N.S. — A press report states that the Davison Lumber Co., Bridgewater, N.S., propose to build 12 miles of railway in connection with the development of certain timber limits at Springfield, N.S.

Toronto, Hamilton and Buffalo Ry.— The Hamilton Board of Works has approved of the building of an industrial spur by the company to the National Abrasive Co.'s premises at the corner of Biggar Av. and Lottridge St., Hamilton, Ont. (Feb., pg. 51.)

Dominion Railway Act Revision. The special committee appointed by the House of Commons to revise and consolidate the Railway Act, met in Ottawa, April 12, under the chairmanship of J. E. Armstrong. The work of consolidation was started about three years ago by S. Price, K.C., acting as special counsel for the Department of Railways, and was completed by Strachan Johnston, K.C. The revised bill contains 456 sections and clauses.

Timiskaming & Northern Ontario Railwaymen's Patriotic Association.—In addition to subscriptions by the commissioners and the office staff, the staff all being members of the 50,000 Club, Toronto, the employes, to Jan. 1, have subscribed $16,721.71 to the Red Cross; $23,-169.55 to the Canadian Patriotic Fund, and $10,754.21 to enlisted employes direct.

Freight and Passenger Traffic Notes.

The C.P.R. is said to be arranging to put a daylight passenger train on its Crowsnest Pass line to run between Lethbridge and Cranbrook.

W. A. Cunningham, Division Freight and Passenger Agent, Halifax and Southwestern Ry. has been authorized by the Board of Railway Commissioners to prepare and issue freight and passenger tariffs of every description for the railway and any vessels it may control or operate.

Jas. Orr, General Freight Agent, Canadian Northern Ry., has been authorized by the Board of Railway Commissioners to prepare and issue tariffs in respect of the tolls upon freight traffic of every description to be charged by the company, for all freight traffic that may be carried upon its railway, or any part of its system, excepting to and from points west of Port Arthur or Westfort, Ont.

There will be some increase in the number of passenger trains on the Canadian Pacific, the Grand Trunk Ry., the Canadian Northern Ry., and the Intercotional Railway, with the usual May change of schedules, although the number of trains in operation prior to November last, when the big cut was made, will not be restored. It is expected that the number of passenger trains will be restored to the usual summer schedule by June or July.

It was announced, April 16, that the G.T.R. had placed an embargo on all carload freight for export via Montreal, except freight consigned to the Imperial Government, and also in cases where specific steamship space has been secured, and acceptance authorized by the General Foreign Freight Agent at Montreal, or the Assistant Foreign Freight Agent at Toronto. The C.P.R. has modified its embargo against freight traffic in Montreal terminals, except Cote St. Paul.

The C.P.R. has arranged to run an inter-hotel train, daily, in each direction, between Calgary and Clacier, during the tourist season, from about June 30 to Sept. 8, leaving Calgary at 7.20 a.m. and arriving at Glacier at 6 p.m. Eastbound, Glacier will be left at 8 a.m. and Calgary reached at 8.45 p.m. The equipment will be baggage car, first class car, three parlor cars and an open top observation car; this car being open on both sides and without a roof. The train will be hauled by an oil-burning locomotive. A stop of one hour will be made at Field for luncheon.

The Edmonton, Dunvegan and British Columbia Ry. is operating from Edmonton to Spirit River, 367 miles, of which 357 miles is over its own tracks. The company operates for the first 10 miles over the Grand Trunk Pacific Ry. under an agreement, pending the laying out of its own terminals in Edmonton. It has built one branch, viz., from Spirit River to Grand Prairie, 49.8 miles, making a total of 406.8 miles in operation. Under the title of the Central Canada Ry, there have been built by the J. A. McArthur interests, 48.5 miles of railway from McLennan to Peace River, on which the company is operating a train service, thus making 455.3 of line actually being operated as independent railways. The third line in which the same contracting firm is interested is the Alberta and Great Waterways Ry., which has a present total length of 290.2 miles from Carbondale Jct., 14.7 miles from Edmonton, to McMurray. The contractors are operating a train service over a section of this line.

Canadian Northern Railway Construction, Betterments, Etc.

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Transport of Canadian Troops Through the United States.—The Dominion Government has issued the following memorandum: "The United States Government has given permission for the passage of Canadian troops on the C.P.R. through the State of Maine and on the Canadian Northern Ry. through the State of Minnesota, between Canadian points in both cases."

Timiskaming and Northern Ontario Railway Betterments, Etc.

The Ontario Legislature passed a resolution April 5, directing that all expenditure for the construction of the T. and N. O. R. and works be chargeable upon the consolidated revenue fund, and that the Lieut. Governor in Council may advance to the T. and N. O. R. Commission such monies as may be required for construction purposes. It subsequently voted $626,593.17 for betterments and for the provision of additional facilities along the line. Of this $143,393.17 was voted for general construction work, and the remainder for the following purposes:

Extension of Kirkland Lake branch, $125,000; freight car repair shed at North Bay, $8,000; sidings, etc., at Swastika, $20,000; passenger station and freight shed at Monteith, $12,000; station and freight shed at Kelso, $1,000; additional sidings at Porquis Jct., $20,000; additional sidings at Iroquois Falls, $6,000; extension at South Porcupine, $2,000; additional sidings, $10,000; ice house, $3,000, baggage and express building at Cochrane, $8,000; new sidings, $15.000; shelter stations, $1,200; replacing timber bridges with steel and concrete structures, $100,000; fencing right of way, $13,000; additional road crossings, $4,000; additional weight of rails and fastenings, $15,000; improvements to station grounds, $3,000; freight shed and office additions, $5,000; new mechanical coaling plant, $27,000; rearrangement of track in connection with coaling plant, $8,000, and addition to machine shop with tools, $15,000 at North Bay; on account of reduction of curvature with change of line $60,000. We are officially advised that the plans for the works provided for by these votes are being prepared. None of the work covered by them has yet been undertaken.

In connection with the votes for revision of main line, S. B. Clement, Chief Engineer and Superintendent of Maintenance, in his report to the commissioners for the year ended Oct. 31, 1916, says: "Surveys for revision of main line were made at several points during the year. In some places these were entirely new surveys, while in others former revision surveys were improved. Of the various lines surveyed, three were chosen for construction during the year; mileage 54 to 55, mileage 63 to 66.5, and at mileage 81, but only the grading on the first of these was completed. The revision between mileage 54 and 55 is 3,920 ft. long. It reduces the distance approximately 30 ft., grades no change, curves reduced 3, maximum curve reduced from 6° 42′ to 3° 30′, and curvature 76° 9′. The diversion, mileage, 63 to 66.5, is 3.4 miles long and will reduce the distance 866 ft. North bound gradients from 1% to 0.4 and southbound from 1% to level, number of curves 6, and maximum curvature from 7° to 3° and the total curvature by 309° 15′. The diversion at mileage 81 is 1,300 ft. long, and reduces the distance 50 ft., curvature 58° and the maximum curve from 6° to 2°. As this work was not completed in 1916, it would appear likely that it will be proceeded with during this year out of the votes made. This work is part of the general plan for the revision of the entire line between North Bay and Liskeard, in order to make the standard uniform throughout the whole distance to Cochrane.

The Lethbridge, Alta, Board of Trade is asking the Canadian Pacific Ry. to open a down town ticket office.

Traffic Orders by the Board of Railway Commissioners.

Canadian Northern Passenger Tariff.

25973. Mar. 27. Approving application of Canadian Northern Ry., under sec. 331 of the Railway Act, for approval of its Standard Passenger Tariff, C. R. C. no. W-1422, showing a rate of 4c a mile on branch lines in British Columbia.

Interchange Tracks at Belleville.

25980. Mar. 30. The application of City of Belleville for an order directing the Canadian Pacific and Grand Trunk Railways to establish interswitching facilities between their respective railways in Belleville. It is ordered that the said railways be required to provide interchange tracks on Pinnacle St., in Belleville, as shown on the plan filed by the C. P. R., that company to construct the tracks at its own expense; and the work to be completed by May 1. That no cars be allowed to stand on either of the interchange tracks on the highway; and that the travelled portion of the highway from 10 ft. south of the most southerly track to 10 ft. north of the most northerly track of the interchange tracks on Pinnacle St., be maintained by the C. P. R. Company in good condition for teaming across the tracks. That where traffic is between Belleville and a shipping point or destination common to the said railway companies, or any two of them, where interswitching facilities are provided, the company upon whose line, including private sidings tributary thereto, the traffic is loaded, be entitled to the line haul and the privilege of effecting the required delivery on the line of the other company by means of interswitching at destination; provided that the said company can afford facilities and privileges equal to those of the competing carrier at no greater charge.

Transfer Track at Frobisher, Sask.

25992. April 4. Re application of C. P. R. for an order directing the Grand Trunk Pacific Ry to pay a portion of the cost of the land acquired from the C.P.R. Natural Resources Department for the construction of a transfer track between the Canadian Pacific and Grand Trunk Pacific Railways at Frobisher, Sask., required to be constructed under order 22244, July 21, 1914. Upon hearing the application at Winnipeg, June 12, 1916, and reading the written submissions filed on behalf of the companies, and applying the principle laid down by the board in the case of the G.T.R. against the C.P.R. (Junction Cut, Hamilton), B.R.C. Ruling, Vol. 5, 294, that lands not only not put to an immediate railway use, but as the board finds will not reasonably and probably be required for such purposes by the senior company, should be dealt with as the lands of a private individual. It is ordered that the Grand Trunk Pacific Ry. be required to pay one-half the cost of the land acquired from the C.P.R. Natural Resources Department for the construction of the transfer track between the said railways and Frobisher.

Canadian Northern Lake and Rail Rates.

26008. April 12. The complaint of J. P. H. Stevenson, Toronto, against the refusal of the Canadian Northern Ry. to apply from Toronto the lake and rail rates published in its tariff C.R.C. no. E-771 from points east of Toronto. It is ordered that the lake and rail rates published in the said tariff applying from points on the C. N. R. east of Toronto, via Toronto and lake lines to Port Arthur and thence via C. N. R. to western points, cannot be exceeded from Toronto, via the said lake and rail route to the same destinations. And it is ordered that the C. N. R. publish and file forthwith a tariff showing such rates from Toronto, via the said lake and rail route, to points on its railway west of Port Arthur, Ont.

C.P.R. Ores and Concentrates Rates.

26026. April 18. Re complaint of British Columbia Mining Association against increased rates on ores and concentrates published in C.P.R. Tariff C.R.C. no. W-2168, to take effect Aug. 1, 1916, from points of shipment in British Columbia; and order 25211, July 27, 1916, suspending the said increased rates until further order. Upon the report and recommendation of the Board's Chief Traffic Officer, no objections having been filed by the complaint, it is ordered that order 25211 be rescinded.

Interswitching Charges at Espanola.

26034. April 16. Re complaints of C. P. R. and Spanish River Pulp and Paper Mills ,against cancellation of interswitching rate of $1.50 a car at Espanola, published in Algoma Eastern Ry. Tariff, C. R. C. no. 73. It is ordered that the complaints be dismissed; and the Algoma Eastern Ry. is hereby granted leave to charge the interswitching rate of 1c per 100 lb shown in its tariff C.R.C. 169, from effective date of said tariff, viz., Feb. 15, 1917.

Joint Commodity Rates on Hay and Straw.

26035. April 17. Re complaint of Montreal Board of Trade against proposed cancellation by the Canadian Pacific and Grand Trunk Railways of joint commodity rates on hay and straw, car loads, from stations in Ontario and Quebec to points in the Eastern United States. It is ordered that Supplement 1 to G. T. R. Tariff C.R.C. no. E-3304 and Supplement 2 to C. P. R. Tariff C.R.C. no. E-2931, issued to become effective May 1, be sus-

C.P.R. Rates on Veneer Lumber.

General Order 185. Mar. 30. Re complaint of Guelph Patent Cask Co., of Scotstown, Que., against rates charged on thin or veneer lumber, it is ordered that the classification of veneer, as it appears in item 2 at pg. 133 of Canadian Freight Classification 16, be amended, by a supplement to the classification, by restricting the 5th class rating to veneer not exceeding 1/16 in. in thickness, and adding the 7th class rating for thickness exceeding 1/16 in. and not exceeding ⅛ in., carloads in each case.

C. P. R. Minimum Weights on Grain.

General order 186. April 4. The complaints of Dominion Millers' Association and Toronto Board of Trade against increased carload minimum weights on grain and grain products for domestic consumption published by the railway companies to take effect April 2, 1917, in the following schedules, viz.: C.P.R.—Supplement 35 to C.R.C. no. E. 196; supplement 47 to C.R.C. no. E.2480; supplement 41 to C.R.C. no. E. 2715; supplement 8 to C.R.C. no E.2907; supplement 7 to C.R.C. no. E. 3120. G. T. R.—Supplement 25 to C.R.C. no. E. 1087; supplement 42 to C.R.C. no. E. 2566; supplement 5 to C.R.C. no. E. 3041; supplement 7 to C.R.C. no. E. 3289, together with similar schedules published and filed by other railway companies. It is ordered (1) That, excepting flour, the complaints against the minimum weights be dismissed. (2) That the proposed minimum weight of 50,000 lb. a car for flour when loaded in cars of the capacity of 60,000 lb. or 70,000 lb. be disallowed. (3) That the complaints against the minimum weights for flour when loaded in cars of the capacity of 80,000 lb. or 100,000 lb. be dismissed. (4) That the railway companies be permitted to increase the minimum weight for flour to 45,000 lb. a car, when loaded in cars of the capacity of 60,000 or 70,000 lb. That the minimum weight authorized by clause 4 hereof, also the minimum weights for flour in cars of greater capacity and for other grain products, be not made effective before April 30, 1917. That should the railway company, for its own convenience, furnish a larger capacity car, in lieu of a car of 60,000 or 70,000 lb. capacity required by the shipper, the minimum weight shall be that for the car so required, provided that the weight actually loaded does not exceed the maximum load for the type of car so required.

Rail and Water Rates Suspended.

General order 187. April 12. Re complaints of the boards of trade of Vancouver, Edmonton, and Winnipeg, the Saskatchewan Branch of the Retail Merchants Association of Canada, the Montreal Board of Trade and the Canadian Manufacturers Association, against the proposed increase in the rail and water rates between Eastern and Western Canada. It is ordered that the through rail and water class rates applying between Eastern and Western Canada, and the through rail and water commodity rates from Eastern to Western Canada, via Port Arthur, Fort William, or Westfort; also the rail and water commodity rates from Eastern Canada to Port Arthur, Fort William or Westfort, for furtherance, named in Tariffs C.R.C. 1 and 2, published by G. C. Ransom, agent, to become effective April 23, be suspended, pending a hearing by the board. And it is further ordered that the through rail and water class rates, applying between Eastern and Western Canada, and the through rail and water commodity rates from Eastern to Western Canada, via Port Arthur, Fort William or Westfort; also the rail and water commodity rates to Port Arthur, Fort William or Westfort, Ont., for furtherance, in effect immediately prior to the close of navigation in 1916, be restored and continued in effect until further order.

New York Central Rd. Cutoff.—A reduction of two to five days on freight shipments between New York, New England, and the west, together with relief of freight congestion at various points and provision for growth of commerce for many years, is the promised result of the N.Y.C.R.'s Castleton cutoff. After ten years of planning the road has reached the point of readiness for construction. The new cutoff, 20 miles long, will double the N.Y.C.R.'s freight capacity and nearly double the passenger capacity. The bridge to be thrown across the Hudson two miles south of Castleton, N.Y., which will cost $5,000,000, must be completed by 1920. The whole project involves the expenditure of $20,000,000.

Section Men's Wages.—The Michigan Central Rd. has increased the wages of section men on its Canadian division from $1.90 and $1.95 to $2.10 and $2.25 a day, the larger amount being for men in cities and large towns.

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Timiskaming and Northern Ontario Railway Betterments, Etc.

The Ontario Legislature passed a resolution April 5, directing that all expenditure for the construction of the T. and N. O. R. and works be chargeable upon the consolidated revenue fund, and that the Lieut. Governor in Council may advance to the T. and N. O. R. Commission such monies as may be required for construction purposes. It subsequently voted $626,593.17 for betterments and for the provision of additional facilities along the line. Of this $143,393.17 was voted for general construction work, and the remainder for the following purposes:

Extension of Kirkland Lake branch, $125,000; freight car repair shed at North Bay, $8,000; sidings, etc., at Swastika, $20,000; passenger station and freight shed at Monteith, $12,000; station and freight shed at Kelso, $1,000; additional sidings at Porquis Jct., $20,000; additional sidings at Iroquois Falls, $6,000; extension at South Porcupine, $2,000; additional sidings, $10,000; ice house, $3,000, baggage and express building at Cochrane, $8,000; new sidings, $15.000; shelter stations, $1,200; replacing timber bridges with steel and concrete structures, $100,000; fencing right of way, $13,000; additional road crossings, $4,000; additional weight of rails and fastenings, $15,000; improvements to station grounds, $3,000; freight shed and office additions, $5,000; new mechanical coaling plant, $27,000; rearrangement of track in connection with coaling plant, $8,000, and addition to machine shop with tools, $15,000 at North Bay; on account of reduction of curvature with change of line $60,000. We are officially advised that the plans for the works provided for by these votes are being prepared. None of the work covered by them has yet been undertaken.

In connection with the votes for revision of main line, S. B. Clement, Chief Engineer and Superintendent of Maintenance, in his report to the commissioners for the year ended Oct. 31, 1916, says: "Surveys for revision of main line were made at several points during the year. In some places these were entirely new surveys, while in others former revision surveys were improved. Of the various lines surveyed, three were chosen for construction during the year; mileage 54 to 55, mileage 63 to 66.5, and at mileage 81, but only the grading on the first of these was completed. The revision between mileage 54 and 55 is 3,920 ft. long. It reduces the distance approximately 30 ft., grades no change, curves reduced 3, maximum curve reduced from 6° 42′ to 3° 30′, and curvature 76° 9′. The diversion, mileage, 63 to 66.5, is 3.4 miles long and will reduce the distance 866 ft. North bound gradients from 1% to 0.4% and southbound from 1% to level, number of curves 6, and maximum curvature from 7° to 3° and the total curvature by 309° 15′. The diversion at mileage 81 is 1,300 ft. long, and reduces the distance 50 ft., curvature 58° and the maximum curve from 6° to 2°. As this work was not completed in 1916, it would appear likely that it will be proceeded with during this year out of the votes made. This work is part of the general plan for the revision of the entire line between North Bay and Liskeard, in order to make the standard uniform throughout the whole distance to Cochrane.

The Lethbridge, Alta, Board of Trade is asking the Canadian Pacific Ry. to open a down town ticket office.

Traffic Orders by the Board of Railway Commissioners.

Canadian Northern Passenger Tariff.

25973. Mar. 27. Approving application of Canadian Northern Ry., under sec. 331 of the Railway Act, for approval of its Standard Passenger Tariff, C. R. C. no. W-1422, showing a rate of 4c a mile on branch lines in British Columbia.

Interchange Tracks at Belleville.

25980. Mar. 30. The application of City of Belleville for an order directing the Canadian Pacific and Grand Trunk Railways to establish interswitching facilities between their respective railways in Belleville. It is ordered that the said railways be required to provide interchange tracks on Pinnacle St., in Belleville, as shown on the plan filed by the C. P. R., that company to construct the tracks at its own expense; and the work to be completed by May 1. That no cars be allowed to stand on either of the interchange tracks on the highway; and that the travelled portion of the highway from 10 ft. south of the most southerly track to 10 ft. north of the most northerly track of the interchange tracks on Pinnacle St., be maintained by the C. P. R. Company in good condition for teaming across the tracks. That where traffic is between Belleville and a shipping point or destination common to the said railway companies, or any two of them, where interswitching facilities are provided, the company upon whose line, including private sidings tributary thereto, the traffic is loaded, be entitled to the line haul and the privilege of effecting the required delivery on the line of the other company by means of interswitching at destination; provided that the said company can afford facilities and privileges equal to those of the competing carrier at no greater charge.

Transfer Track at Frobisher, Sask.

25992. April 4. Re application of C. P. R. for an order directing the Grand Trunk Pacific Ry to pay a portion of the cost of the land acquired from the C.P.R. Natural Resources Department for the construction of a transfer track between the Canadian Pacific and Grand Trunk Pacific Railways at Frobisher, Sask., required to be constructed under order 22244, July 21, 1914. Upon hearing the application at Winnipeg, June 12, 1916, and reading the written submissions filed on behalf of the companies, and applying the principle laid down by the board in the case of the G.T.R. against the C.P.R. (Junction Cut, Hamilton), B.R.C. Ruling, Vol. 5, 294, that lands not only not put to an immediate railway use, but as the board finds will not reasonably and probably be required for such purposes by the senior company, should be dealt with as the lands of a private individual. It is ordered that the Grand Trunk Pacific Ry. be required to pay one-half the cost of the land acquired from the C.P.R. Natural Resources Department for the construction of the transfer track between the said railways and Frobisher.

Canadian Northern Lake and Rail Rates.

26008. April 12. The complaint of J. P. H. Stevenson, Toronto, against the refusal of the Canadian Northern Ry. to apply from Toronto the lake and rail rates published in its tariff C.R.C. no. E-771 from points east of Toronto. It is ordered that the lake and rail rates published in the said tariff applying from points on the C. N. R. east of Toronto, via Toronto and lake lines to Port Arthur and thence via C. N. R. to western points, cannot be exceeded from Toronto, via the said lake and rail route to the same destinations. And it is ordered that the C. N. R. publish and file forthwith a tariff showing such rates from Toronto, via the said lake and rail route, to points on its railway west of Port Arthur, Ont.

C.P.R. Ores and Concentrates Rates.

26026. April 18. Re complaint of British Columbia Mining Association against increased rates on ores and concentrates published in C.P.R. Tariff C.R.C. no. W-2168, to take effect Aug. 1, 1916, from points of shipment in British Columbia; and order 25211, July 27, 1916, suspending the said increased rates until further order. Upon the report and recommendation of the Board's Chief Traffic Officer, no objections having been filed by the complaint, it is ordered that order 25211 be rescinded.

Interswitching Charges at Espanola.

26034. April 16. Re complaints of C. P. R. and Spanish River Pulp and Paper Mills ,against cancellation of interswitching rate of $1.50 a car at Espanola, published in Algoma Eastern Ry. Tariff, C. R. C. no. 73. It is ordered that the complaints be dismissed; and the Algoma Eastern Ry. is hereby granted leave to charge the interswitching rate of 1c per 100 lb shown in its tariff C.R.C. 169, from effective date of said tariff, viz., Feb. 15, 1917.

Joint Commodity Rates on Hay and Straw.

26035. April 17. Re complaint of Montreal Board of Trade against proposed cancellation by the Canadian Pacific and Grand Trunk Railways of joint commodity rates on hay and straw, car loads, from stations in Ontario and Quebec to points in the Eastern United States. It is ordered that Supplement 1 to G. T. R. Tariff C.R.C. no. E-3304 and Supplement 2 to C. P. R. Tariff C.R.C. no. E-2931, issued to become effective May 1, be sus-

C.P.R. Rates on Veneer Lumber.

General Order 185. Mar. 30. Re complaint of Guelph Patent Cask Co., of Scotstown, Que., against rates charged on thin or veneer lumber, it is ordered that the classification of veneer, as it appears in item 2 at pg. 133 of Canadian Freight Classification 16, be amended, by a supplement to the classification, by restricting the 5th class rating to veneer not exceeding 1/16 in. in thickness, and adding the 7th class rating for thickness exceeding 1/16 in. and not exceeding ⅛ in., carloads in each case.

C. P. R. Minimum Weights on Grain.

General order 186. April 4. The complaints of Dominion Millers' Association and Toronto Board of Trade against increased carload minimum weights on grain and grain products for domestic consumption published by the railway companies to take effect April 2, 1917, in the following schedules, viz.: C.P.R.—Supplement 35 to C.R.C. no. E. 4196; supplement 47 to C.R.C. no. E.2480; supplement 41 to C.R.C. no. E. 2715; supplement 8 to C.R.C. no E.2907; supplement 7 to C.R.C. no. E. 3120. G. T. R.—Supplement 25 to C.R.C. no. E. 1087; supplement 42 to C.R.C. no. E. 2566; supplement 5 to C.R.C. no. E. 3041; supplement 7 to C.R.C. no. E. 3289, together with similar schedules published and filed by other railway companies. It is ordered (1) That, excepting flour, the complaints against the minimum weights be dismissed. (2) That the proposed minimum weight of 50,000 lb. a car for flour when loaded in cars of the capacity of 60,000 lb. or 70,000 lb. be disallowed. (3) That the complaints against the minimum weights for flour when loaded in cars of the capacity of 80,000 lb. or 100,000 lb. be dismissed. (4) That the railway companies be permitted to increase the minimum weight for flour to 45,000 lb. a car, when loaded in cars of the capacity of 60,000 or 70,000 lb. That the minimum weight authorized by clause 4 hereof, also the minimum weights for flour in cars of greater capacity and for other grain products, be not made effective before April 30, 1917. That should the railway company, for its own convenience, furnish a larger capacity car, in lieu of a car of 60,000 or 70,000 lb. capacity required by the shipper, the minimum weight shall be that for the car so required, provided that the weight actually loaded does not exceed the maximum load for the type of car so required.

Rail and Water Rates Suspended.

General order 187. April 12. Re complaints of the boards of trade of Vancouver, Edmonton, and Winnipeg, the Saskatchewan Branch of the Retail Merchants Association of Canada, the Montreal Board of Trade and the Canadian Manufacturers Association, against the proposed increase in the rail and water rates between Eastern and Western Canada. It is ordered that the through rail and water class rates applying between Eastern and Western Canada, and the through rail and water commodity rates from Eastern to Western Canada, via Port Arthur, Fort William, or Westfort; also the rail and water commodity rates from Eastern Canada to Port Arthur, Fort William or Westfort, for furtherance, named in Tariffs C.R.C. 1 and 2, published by G. C. Ransom, agent, to become effective April 23, be suspended, pending a hearing by the board. And it is further ordered that the through rail and water class rates, applying between Eastern and Western Canada, and the through rail and water commodity rates from Eastern to Western Canada, via Port Arthur, Fort William or Westfort; also the rail and water commodity rates to Port Arthur, Fort William or Westfort, Ont., for furtherance, in effect immediately prior to the close of navigation in 1916, be restored and continued in effect until further order.

New York Central Rd. Cutoff.—A reduction of two to five days on freight shipments between New York, New England, and the west, together with relief of freight congestion at various points and provision for growth of commerce for many years, is the promised result of the N.Y.C.R.'s Castleton cutoff. After ten years of planning the road has reached the point of readiness for construction. The new cutoff, 20 miles long, will double the N.Y.C.R.'s freight capacity and nearly double the passenger capacity. The bridge to be thrown across the Hudson two miles south of Castleton, N.Y., which will cost $5,000,000, must be completed by 1920. The whole project involves the expenditure of $20,000,000.

Section Men's Wages.—The Michigan Central Rd. has increased the wages of section men on its Canadian division from $1.90 and $1.95 to $2.10 and $2.25 a day, the larger amount being for men in cities and large towns.

Electric Railway Department

The Toronto Suburban Railway's Line to Guelph Opened.

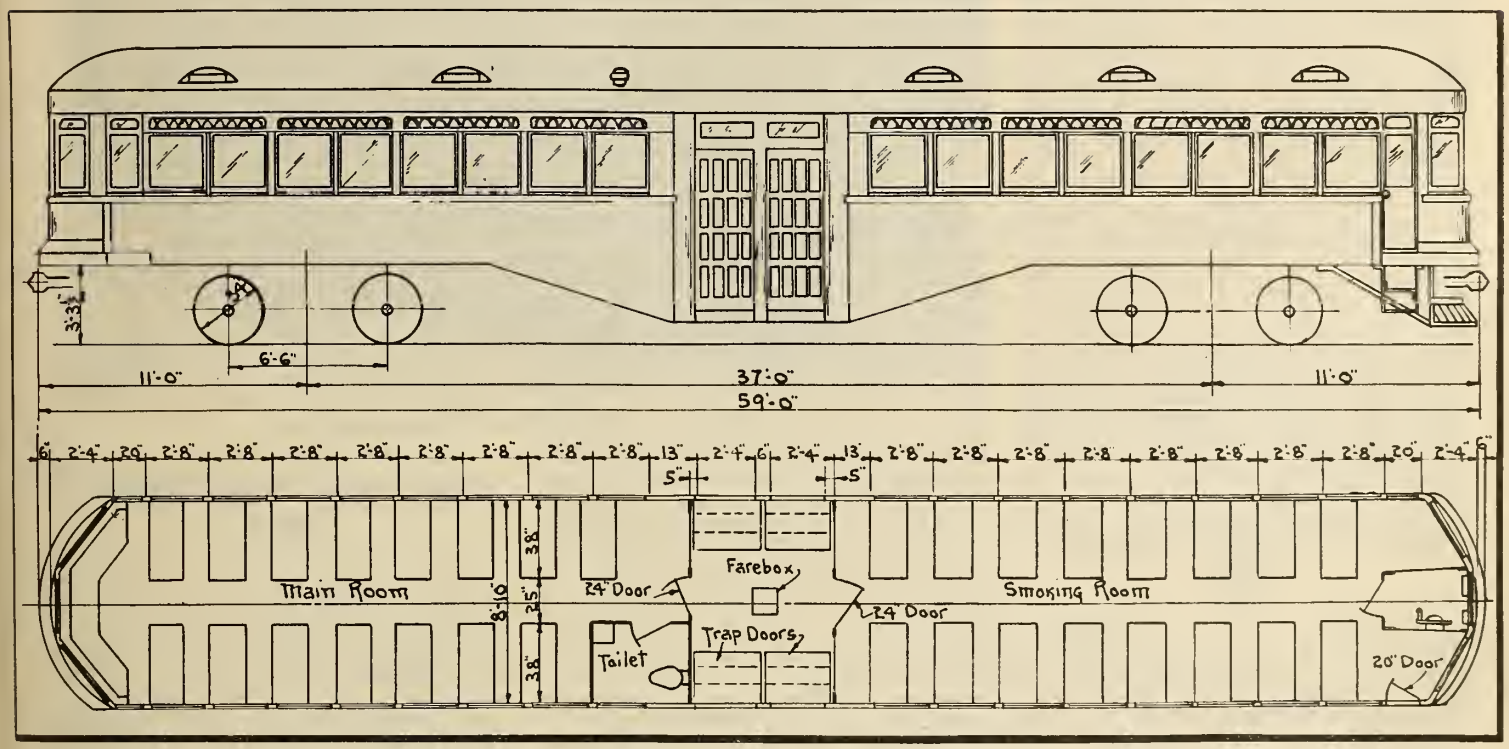
The official inspection of the extension of the Toronto Suburban Ry. from Lambton to Guelph, by th eOntario Railway and Municipal Board, took place April 12. A car was run through from Lambton on the previous day and the official party joined it at Guelph. The car ieft Guelph about 10 a.m., April 12, and arrived at Lambton about 2 p.m The party included A. B. Ingram, Deputy Chairman, and H. W. Middlemist, Chief Engineer, Ontario Railway and Municipal Board. Lt. Col. G. C. Royce, General Manager, H. T. Hazen, M.Can.Soc.C.E., Chief Engineer, E. T. Wilkie and T. Malm of the Toronto Suburban Ry.'s engineering staff. A. F. Stewart, M.Can.Soc.C.E., Chief Engineer, Eastern Lines, Canadian Northern Ry., and Ewen Mackenzie, General Contractor for the line.

A temporary service was commenced over the line, April 14, two cars being operated, each making a round trip daily, except Sunday. It is expected that a complete service will be put on during May, but the company has to a certain extent been handicapped owing to a fire which destroyed a number of cars intended for this service, at the Preston Car and Coach Co.'s works, a few weeks ago.

This extension, which is 48.29 miles long, starts from Lambton, the end of the original line, and running through Lambton Park, crosses the Humber River by a trestle and girder bridge, a little south of the C.P.R., and following the Toronto Niagara Power Co.'s right of way for a short distance, it swerves to the south in order to curve under the C.P.R. tracks at the crossing of Mimico Creek. The location is then practically parallel with Dundas St., partly south and partly north through Summerville and Dixie, turning south again a little west of Dixie station, and paralleling the C.P.R. to Cooksville station, where it crosses Dundas St., and turns northwesterly, proceeding in almost a straight line to Meadowvale, crossing the Credit River and passing under the C.P.R. near Churchville, thence proceeding through Huttonville and Norval to Georgetown. From the latter place the line parallels the G.T.R. to Acton and runs through Eden Mills nearly direct to Guelph. Surveys for the extension were completed to Georgetown, 25.5 miles, in 1911, and through to Guelph and Berlin in the following year. Construction was started in July, 1912, and grading was completed in 1913, but no track was laid until 1914, when 41.50 miles were laid westerly from Islington, the remaining mileage westerly to Guelph and easterly from Islington to Lambton being laid in 1915. The line is, for the most part laid on private right of way, and is of standard gauge ,single track with turnouts, and the rail used is 60 lb.

The overhead equipment work is of the catenary suspension type, and power is received from the Toronto Niagara Power Co.'s line at 25,000 volts, a.c. 3 phase, 25 cycle and stepped down and passed through 500 k.w. rotary converters which deliver it to the line at 1,500 volts d.c. There are three substations on the line, one each at Islington, Georgetown and Guelph, the last mentioned being at the corner of Dundas and Bay Sts. The Georgetown station has 1,000 k.w. capacity, in two 500 k.w. units, while each of the other two have a single 500 k.w. unit, with provision for the addition of a similar unit in the future. The three stations are brick and concrete construction. The Islington station is provided with living accommodation for the operator and the Georgetown and Guelph stations contain waiting, baggage and express rooms and dispatching offices, providing railway station facilities.

The Lambton car barn, which was fully described and illustrated in Canadian Railway and Marine World for May, 1916, consists of inspection, repair, machine, paint, and blacksmith shops, boiler room, coal store and men's lavatory, in addition to the administrative offices, the whole occupying a space 184¾ x 128 ft. The repair shop has three tracks and the inspection shop four tracks, each to accommodate two cars. The machine shop is equipped with all the necessary tools for the repair and upkeep of the equipment. The boiler house is equipped with a 75 h.p. boiler of the locomotive type and the coal storage is conveniently arranged for handling coal direct from the tracks. The administrative offices are arranged over the store and lavatory, and consist of five offices with a public waiting space. The buildings are heated by a low pressure vacuum steam heating system for about 4,500 sq. ft. of radiation.



Centre Entrance Interurban Car, Toronto Suburban Railway.

The cars, probably the first of this type to be operated on suburban service in Canada, with the possible exception of some on the British Columbia Electric Ry., are of the centre entrance type. The principal dimensions are:

Length over buffers	59 ft.
Length over ends	58 ft.
Width over steel sheathing	8 ft. 10 in.
Width overall	9 ft.
Height from top of rail to underside of side sill at bolster	3 ft. 2½ in.
Height from rail to top of first step tread	1 ft. 4¼ in.
Height of step risers	10½ in.

The car is divided into two sections, the forward compartment being for smokers and the rear compartment for general use, including lavatory accommodation. They are provided for through ser-

vice and are arranged for single end service only. The design of the steel framing presents a striking feature in the omission of continuous centre sills between the buffers. Although this is a novelty in interurban service, it conforms to the most modern practice in the design of side girder steel cars where light weight is imperative and single end operation desired. The interior finish is cherry, with smooth flat surfaces as far as possible; headlining throughout is of three ply poplar veneer, all body sash are of the raising type and single storm sash are to be fitted for the side windows. The centre window in the front vestibule is in two parts, the upper part made to drop with provision for holding it at different heights. The two corner windows in each end are made to drop and are not provided with cross bars. Five automatic ventilators are provided in each compartment and a globe ventilator in the lavatory. Each car is equipped with 31 walkover seats, and one circular seat in two sections in the rear of the general compartment. The smoking compartment has low backed seats upholstered in green pantasote, and the general compartment has high backed seats with head roll upholstered in green plush. The trucks are 6½ ft. wheel base with 34 in. rolled steel wheels, M.C.B. axle journals 4¼ by 8 in. Ten of these cars were ordered from the Preston Car and Coach Co., two have been delivered and three were destroyed by fire at the car shops a few weeks ago. Two other cars have also been ordered, to be built at the Toronto Ry. shops, of a type similar to those used on the Toronto Suburban Ry. between West Toronto and Weston, for operation between Lambton and Cooksville. The centre entrance type of cars was fully described and illustrated in Canadian Railway and Marine World for March, 1916.

London Street Railway Employes Wages.

The London St. Ry. Co.'s conductors and motormen organized recently as a division of the Amalgamated Association of Street Electric Railway Employes of America, and followed that up by asking recognition of the union, and for a very large increase in wages, viz.: for from 30c to 35c an hour, according to term of service ,against from 21c to 26c, which they were then getting. After negotiations between a committee of the employes, regardles of whether they were members of the union or not, and the company's officials, an all round increase of 2c an hour was agreed on from April 1, 1917, to May 1, 1918, and from year to year thereafter unless changes by mutual consent. Following is a comparison of the old and new scale:

	Old Scale.	New Scale.
While on spare list	21c	23c
Remainder of first year in service	23c	25c
Second year	24c	26c
Third year	25c	27c
After third year	26c	28c

Conductors or motormen working snow ploughs or sweepers, or training new men ,to be paid 2c an hour extra when so engaged.

The following are some of the principal provisions in the agreement. The company will not object to any of its employes joining the Amalgamated Association, etc. The company will meet any committee of its employes at any time, whether they are the properly accredited officers of the association or not, such committees to consist exclusively of the company's employes. Conductors or motormen who may be suspended, or discharged, shall have the right to have their cases taken up by a committee or employes. Seniority in the service shall be given, so that conductors and motormen may select their runs. The company will pay half cost of uniforms, the same to be obtained from the Superintendent. The company will take immediate steps to provide lavatory accommodation on the respective lines. Each conductor to be supplied with $15 change.

Winnipeg Electric Railway Protests Against Jitney Competition.

Wilfrid Phillips, General Manager, Winnipeg Electric Ry., has written Winnipeg's City Clerk recently as follows: "I am instructed by the directors of the company to draw your attention to our communication addressed to you on the subject of 'Jitneys' on May 21, 1915, and to again point out to you the unfair treatment which we are being subjected to by the city council permitting and encouraging jitneys to operate practically without regulation and in unrestricted competition with our company.

"When the company entered into the contract authorized by bylaw 543 it assumed very onerous burdens of taxation and otherwise, and was limited as to the rate of fares collected, in consideration of being given exclusive rights to carry passengers upon the streets of the city. The company contends that the action of the city in permitting and encouraging jitney competition is in direct breach of that contract. The company in the last two years (being the years of jitney competition) paid to the city approximately $545,747.92 for general taxes, percentage of gross revenue and pavement charges. During these years it has also cost the company $20,000 annually for keeping its tracks clear of snow, thus affording a clean road for the jitneys, and also a car tax of $20 a car, amounting to $12,920. These are some of the amounts which the company has to pay for the privilege of carrying on the business of carrying passengers over the streets of Winnipeg at fixed fares, and on the other hand the jitneys are allowed free and unlimited competition upon payment of the sum of $20 a year per car. The company is at a loss to understand why the council objected to the legislation proposed by the Province of Manitoba to bring the jitneys under the operation of the Public Utilities Commission. They are a public utility in the ordinary sense of the word, just as much as the street railway, and the intention of that act was that all public utilities should be under the jurisdiction of the commission. In view of all that has taken place the company has concluded,and it is justified in concluding, that the city is encouraging the jitney competition and seeks to financially embarrass this company.

"I am, therefore, instructed by the directors to notify the city that as this unfair competition is being encouraged by the city the company must take a firm stand to enforce its rights. Unless the council takes immediate steps to carry out its part of the contract, the company will be obliged to consider refusing to pay any further sums as percentages of gross revenue, as taxes on its cars, or as pavement charges, and in any event will insist that the city reimburse the company the amount lost through jitney competition during the period this competition has been permitted by the city. This loss amounts to at least $1,000,000.

"The company has always provided for the citizens of Winnipeg a first class, efficient street railway system, and one that ranks high with other systems on this continent. The direct result of permitting the jitney competition to continue will be to so financially embarrass the company that it will not be able to keep its system efficient and up to date, and will not be able, due to inability to procure additional capital, to make extensions to the system generally, and will not be able to provide the citizens of Winnipeg with efficient and up to date transportation which it has always heretofore done."

The city bylaw granting the company its franchise contains the following clause: "The city will not during the currency of this agreement grant any permit or franchise to any other operation of a street car system in the city or in any way authorize the construction of a street railway system by any other person or persons or corporation. No other street railway company than the applicants shall be granted hereinafter by the council permission to use electricity or any other kind of motive power except animal, but in case the applicants refuse or neglect to build or operate any line or part of the line provided for in this bylaw or subsequently required by the council to be built and operated under the conditions aforesaid, the city may grant to any other company or party the right to build and operate such line, crossing where necessary, but not on the same street paralleling the lines of the applicant, and to use electricity as the motive power thereon."

Mainly About Electric Railway People.

Bion J. Arnold, Chicago, Ill., has been engaged to investigate the Harrisburg Railway Co.'s operating conditions.

Ernest Rogers has been appointed chief clerk, British Columbia Electric Ry., Vancouver, B.C., vice W. Saville, promoted.

I. L. Matthews has been elected chairman of the Public Utilities Commission, Port Arthur, Ont., vice A. E. Wideman, resigned.

F. C. McMath, President, Canadian Bridge Co., Walkerville, Ont., has been appointed a member of the Detroit, Mich. appointed a member of the Detroit, Mich., St. Ry. Commission.

W. Saville heretofore chief clerk, has been appointed Comptroller, British Columbia Electric Ry., Vancouver, B.C., vice H. W. Dyson resigned. He has been in the company's service since May, 1911, and prior to that, was in transportation service in England for several years.

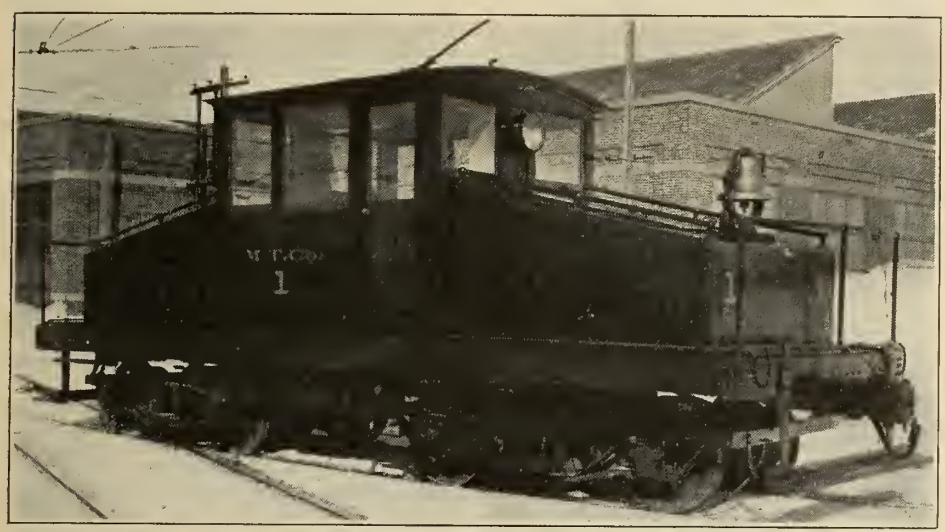
B. Greenway, Engineer Maintenance of Way, Regina Municipal Ry., has resigned He is reported to have been appointed Superintendent of Grand Forks St. Ry., Grand Forks, N.D. Prior to going to Regina, Mr. Greenway was Superintendent of the Brandon, Man., Municipal Ry.

H. W. Dyson has resigned as Comptroller, British Columbia Electric Ry., Vancouver, B.C., to become General Manager, Yorkshire and Canadian Trust, Ltd. He entered the company's service in 1910 as Assistant Comptroller, and succeeded G. Kidd as Comptroller on the latter's promotion to General Manager.

Electric Locomotives, Montreal Tramways Co.

The Montreal Tramways Co. is adding to its equipment two electric locomotives, one of which, built at its Youville shops, has been placed in service and the other is being built in the same shops. The main constructional features are as follows:

The underframe, side and end sills are of heavy 12 in. channel, with built up plate bolsters, and a through centre sill of 2½ ft. x 6 in. I-beams. The I beams project through the end sill, and are boxed in to provide a pocket for the coupler head. The framing members are tied together, and the whole space between the sills is filled with reinforced concrete, which thus forms a floor to which the body is bolted. Openings are left in the concrete for pipes and wiring to pass through.



Electric Locomotive, Montreal Tramways Company

The cab is of reinforced wood construction, with a floor raised 2 in. off the concrete, leaving space for wiring and piping. The two sheet steel hoods cover details of electrical and air brake equipment. Hinged covers are provided on these hoods for inspection of equipment and ventilation of the rheostats. Small covers are also provided for filling the sand boxes, which are placed directly over the bolsters and are provided with air sand valves, for distribution to the wheels. Provision is made for the sand outlet to follow the wheels around curves.

The trucks are the company's standard freight car type, with 6½ ft. wheel base. The electrical equipment consists of 4 Westinghouse 112-B motors, with 2 K-14 controllers, fitted with a line switch. A commutating switch is arranged so that two running speeds can be obtained. This makes the operation of the locomotive very flexible, as it secures the advantage of large draw bar pull, with low power consumption, at low speed, for shunting, and a fairly high speed for main line operation. The air brakes are standard Westinghouse type A.M.M., designed for train operation.

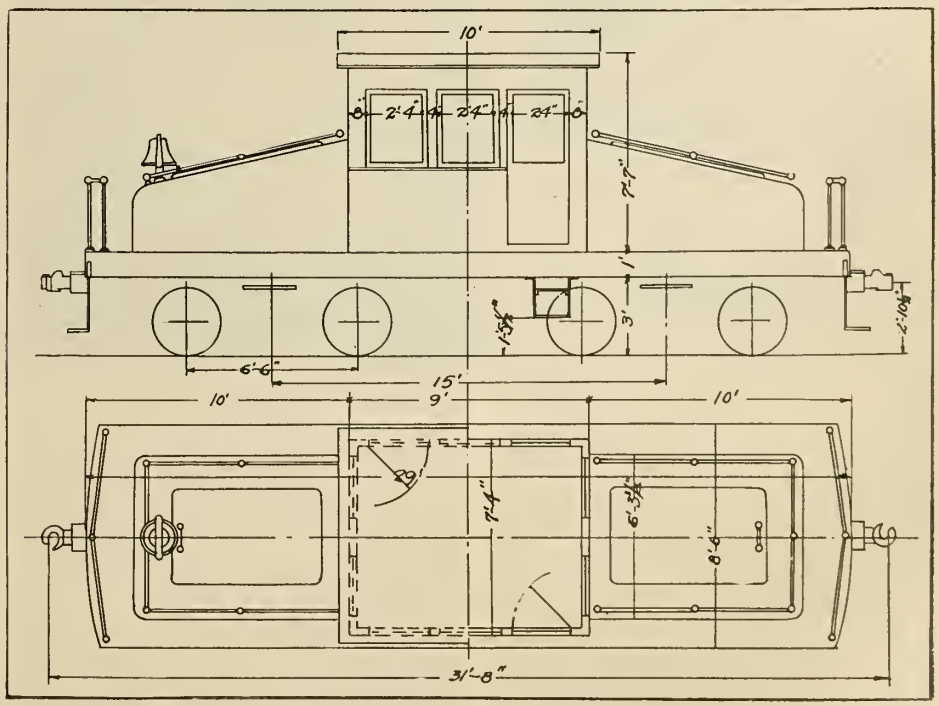
One of these locomotives has been placed on the lines in the east end of Montreal, where quite a large traffic from the harbor and the Canadian Northern Ry. to various manufacturing plants is being handled. The other will be placed on the north end lines, to handle cars from the C.P.R. to suburban points.

Headlights for Ontario Electric Railway Cars.

A bill introduced at the Ontario Legislature's recent session by G. H. Gooderham, M.L.A. for South Toronto, was slightly amended and passed as follows:

1. The Ontario Railway Act is amended by adding the following as section 107a:

107a.—(1) It shall be unlawful to use on a car of a street railway or of a railway operated by electricity on the highway any lighted device of over 4 candle power equipped with a reflector unless the same shall be so designed, deflected or arranged that no portion of the beam of reflected light when measured 75 ft. or more ahead of the lamp shall rise above 42 in. from the level surface on which the car stands.



Electric Locomotive, Showing Dimensions, Montreal Tramways Company.

(2) For every contravention of subsection 1 the person offending shall incur a penalty of not less than $10 or more than $100 recoverable under The Ontario Summary Convictions Act.

(3) Subsections 1 and 2 shall not come into force until a day to be named by the Lieutenant Governor by his proclamation.

Interurban Motors Limited.

Canadian Railway and Marine World for April gave some information about the formation of a company with the above title, to carry passengers and freight in connection with the London & Lake Erie Ry. & Transportation Co.'s electric railway, which runs from London to St. Thomas, in fact, to provide feeders for that line. Interurban Motors, Ltd., has its headquarters at St. Thomas, Ont., and an authorized capital of $100,000, the officers being: President, W. H. Moody, St. Thomas; Vice President, W. H. Finch, Aylmer; Secretary-Treasurer, W. H. Jolly, St. Thomas; Mechanical Director, J. T. Webster, St. Thomas; and Managing Director, W. N. Warburton, London, the latter being also General Manager, Secretary-Treasurer and Purchasing Agent of the London & Lake Erie Ry. & Transportation Co. Reo motor cars, made at Lansing, Mich., each with capacity for 26 passengers besides the motorman and conductor, have been bought. The first service, which will be started about May 1, will be between St. Thomas and Aylmer, and will be carried on by 2 passenger cars and 2 freight cars, the latter each of 3 tons capacity. Later on services will be established between Union and Sparta, and between Lambeth and Delaware.

The special commission appointed by the Quebec Legislature to draw up a new franchise for the Montreal Tramways Co. has met from time to time during the past month. Delegations have attended the several meetings presenting the views of various public bodies, and giving suggestions as to what they thought necessary to relieve congestion in the way of new lines, etc. The commissioners left Montreal Mar. 27, on a trip to Detroit, Cleveland and other cities in the United States to study the electric railway situation there, returning to Montreal April 5.

The London and Lake Erie Ry. and Transportation Co's Financial Position, Etc.

This railway which was built by the South Western Traction Co., extends from London to Port Stanley, Ont., by a slightly circuitous route of 28 miles, passing on its way through a section of St. Thomas, where connection is made with the municipal electric railway there. The railway showed a loss of $832 for the year ended June 30, 1915. Since the reopening of the London and Port Stanley Ry. as an electric line, the company's revenue is said to have declined considerably, one of the company's officials being reported to have said that the L. and L. E. Ry. and T. Co. was being put out of business by the L. and P. S. Ry. competition.

P. Pocock, Vice Chairman of the London Ry. Commission, is reported to have said: "If we can buy the L. and L. E. Ry. and T. Co. for the price which we have offered for it, I think its purchase would be a sound business proposition. If the road goes out of business it would be a serious loss to the city, as it taps a rich district from which much business comes to the city. He added that he did not think any attempt would be made to use the L. & L. E. R. & T. Co.'s line as a substitute for double tracking the L. & P. S. R. It would be run rather, he stated, as a separate branch out of London, and that he believed that the L. & L. E. R. & T. Co.'s line holds great possibilities in the extension of the hydro radial scheme.

A report states that the difference between the price asked by the company and that offered by the London Railway Commission is about $42,000; the company offering to sell at 35c on the dollar and the Commission offering to pay 30c. It is stated that in the event of the commission purchasing the line the engineers recommend the taking up of the line between St. Thomas and Port Stanley, and the substitution of a straight piece of line for the existing track between London and Talbotville.

A director of the company is reported to have made the following statement with respect to negotiations that have taken place with the London Railway Commission, or the Hydro Electric Power Commission of Ontario respecting the purchase of the line:—

"The price at which the directors offered the railway was 60c on the dollar of the bonded indebtedness, which is $840,000. The purchase price would be $504,000. Sir Adam Beck did not wish the Commission to assume the whole payment, which resulted in discussion of other means by which the sale could be effected. It was proposed that the commission should pay 40%, or $336,000, that Westminster and Southwold Townships should pay 5%, or $42,000 each, and that an application should be made to the Ontario Government for a grant to the City of London, in view of the great loss sustained by the city through the London & Port Stanley Ry. The city had prior to 1856 invested about $1,000,000 and received no return whatever until 1872, when Sir John Carling negotiated a lease to the Great Western Ry. From 1872 until 1914 it did not pay half a cent. on the dollar. The debt carried by the city then represented over $2,000,000. In 1914 it was electrified at an expense exceeding another $1,000,000. The City of London has borne the whole load and Western Ontario has derived the benefit. When built it was a colonization road running south to the lake. London should have received recognition for this expenditure when the municipal loan fund was distributed in 1873, but did not. It was agreed that if such an application was successful the London & Lake Erie should be paid a further 10%, making in all 60c on the dollar, or $504,000. Less than that has not been discussed by the directors in Toronto, who hold the majority of the bonds. Sir Adam Beck made an offer of 35%. being 5% less than the commission's share would be if the price on 60% was distributed between it and the townships and the Ontario Government as suggested."

A proposition for the sale of the St. Thomas—Port Stanley section of the line, about 8 miles, was laid before the St. Thomas City Council, April 11. The price asked for that section of the line, together with 4 cars is $168,000, which represents 60% on one third of the company's bonded indebtedness. It is suggested that the operation of this 8 miles of railway in conjunction with the city's own electric railway, which showed a deficit of $7,327 for the year ended June 30, 1915, would pay expenses. The matter was taken into consideration and a joint meeting to discuss it was arranged.

Jitney Traffic Notes.

Residents of West Kildonan, Man., have organized a jitney service to run on Main St. from the Winnipeg city limits to the Kildonan Park, with a return fare of 5c.

The discussion during the passage through the Alberta Legislature of the City of Edmonton's bill, which among other things gives power to regulate jitney traffic, it was stated that it was necessary for the financial security of the municipal electric railway that the city should be able to control the traffic; and that the jitneys take the cream off the traffic during fine weather and did not go out on stormy days.

West Kildonan and Assiniboia municipalities, adjoining Winnipeg, are charging a license fee for jitneys operating in the municipalities. The City of Winnipeg owns and maintains two public parks, one in each of these municipalities, the privileges of which are enjoyed by the residents. The Winnipeg Parks Board is trying to arrange so that jitneys running to the parks from the city will not have to pay the extra license fee.

The New Westminster, B.C., City Council proposed to pass a bylaw to subsidize jitneys running from the city to points in the Fraser Valley the difference between the old license fee and the new, which was increased this year to $15, so that jitneys plying to and from Vancouver might be forced to contribute a little more to the upkeep of the streets, and it was felt that this fee might be too high for the cars running to Fraser Valley points. The City Solicitor advised the council that it has no authority to do anything of the kind.

The Winnipeg City Council has passed a bylaw providing that no jitney shall use a card with the legend "Anywhere." The driver must in future carry a card showing his tariff rates. These cards must also show the name and address of the owner and the provincial license number. In case of a dispute the driver must give one of these cards to the passenger objecting. The driver must also inform his fare in advance what his charges will be when the run is off his regular route. Fares on regular routes are 5c between 6 a.m. and 12 midnight, and 10c between midnight and 6 a.m.

Alleged Contempt of Court by the Toronto Railway's General Manager.

Under a judgment obtained on Jan. 15, 1903, the Toronto Ry. is required to supply the City of Toronto with a statement of values of its property, and the city claims that this has not been done according to the judgment. Action was taken some time ago, by the city, and the committal of R. J. Fleming, General Manager of the company to jail for contempt of court, for not supplying the information, as directed, was asked. This was granted, and an order made directing the sheriff to take him into custody, after April 6, and that he be imprisoned until he had purged his contempt. The case was taken to the Appellate Division of the Supreme Court of Ontario, on the grounds that the court had no jurisdiction, the matter being purely one for the Ontario Railway and Municipal Board to decide, and also that it was not proper to commit the General Manager for the company's disobedience of the court's order.

In allowing the appeal, Apr. 3, Chief Justice Meredith stated that the Ontario Railway and Municipal Board had no jurisdiction, exclusive or otherwise, in the matter, but that no case had been made out on the material presented, for the committal of the General Manager. There was nothing in the evidence to show that he had anything to do with the compilation or furnishing of the information desired, except the mere statement that he was General Manager of the company, but, if it were shown that the disobedience of a court's order by a corporation was an act of its manager, then, no doubt, a committal order might properly be made. The Chief Justice expressed surprise that the city had not taken the simple course of moving against the company by way of asking for sequestration, or a fine, and allowed the appeal, without prejudice to the city's right to renew its application upon further material.

On April 10, the city again moved to have R. J. Fleming, General Manager, Toronto Ry., committed to the common jail for the County of York because the company neglected and refused to comply with an order made on Jan. 14, 1903, by Mr. Justice Ferguson, whereby he ordered the company to furnish the city with the statement referred to in the agreement between the city and the company, showing what details, if any, as might be settled by the senior judge of York County, or in the alternative for an order that a writ of sequestration might issue directed to certain commissioners to be named, to sequester the property and effects of the company for contempt of Mr. Justice Ferguson, or in the alternative for an order that the company may be fined, or such other order as the court may deem meet.

The British Columbia Electric Ry. has renamed its station, Eburne, on its Lulu Island line, Marpole, after R. Marpole, General Executive Assistant, C.P.R., Vancouver.

London and Port Stanley Ry. employes met in London, Ont., April 5 to perfect their organization in connection with the Amalgamated Association of Street and Electric Railway Employes of America.

Rebuilding Long Broom Sweepers.

The Levis County Ry. has rebuilt two of its long broom snow sweepers recently. They are 14 years old and have seen probably the most severe service of any in existence, in some years being in continuous service for 6 weeks at a time without a day's break. The weather conditions in Levis are about the worst to contend with on the American continent. The summer, although short, is often exceedingly hot, and the winter long, with severe frosts and an average of 110 to 120 in. of snow. The district served by the company is fairly open, one-third on high ground and two-thirds on low ground, along the south shore of the St. Lawrence River, and all too well situated for snow and storms.

Rear end of rotary snow plough, Levis County Ry. showing cutting blades and fan paddles, which run at 1,200

These sweepers had both their exposed ends rotted and broken away, also the ends of the side sills, the end sills and two end crossings, as well as the front body posts, otherwise the main bodies of the cars were in fairly good condition. The reconstruction was so arranged that the main body of the car would be untouched, including the part of the side sills and the crossings which were good, also bearing in mind future depreciation of these parts, so that they can be replaced with steel, when it becomes necessary, with little expense.

All the rotten or damaged parts were removed (some fell out) and a new steel underframe was constructed, so that it could be slid under the body and bolted to it. This steel underframe has side sills of 6 x 6 x ⅝ in. angle, end sills and all crossings of 5 in. I beams. Two 4 in. I beams were inserted between the end sill and crossing, and a 4 in. channel was placed between them to carry the draw bar arrangement. The wheel frame was rivetted. The total weight of the broom gear, draw bars and side wings was thus placed on the steel frame. The frame was then slid under the car body, which was lowered on to it and bolted. Steel angle body corner posts were then erected and riveted and the old remaining side sills, crossings, etc., were braced and connected by 6 in. angle plates. The rest of the car was finished off with the necessary wood. The cost of these alterations was approximately $250 each car.

The whole of the work was carried out under the direction of H. E. Weyman, Master Mechanic, and by order of A. K. MacCarthy, Manager.

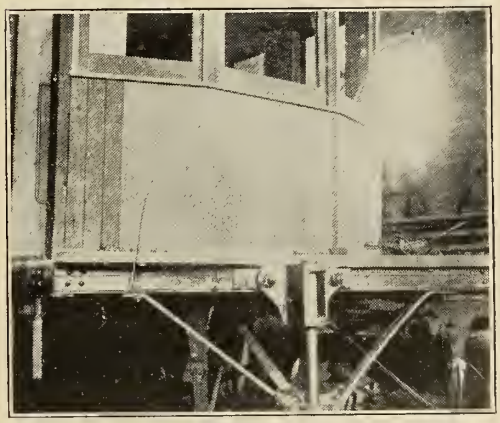
The Edmonton Radial Railway Deficits, Etc.

The Edmonton Radial Ry., which is owned by the City of Edmonton, Alta., was opened for traffic Nov. 9, 1908, with a two car service along Jasper St. and Norwood Boulevard, there being then 2 miles of double track and 4 miles of single track laid. At the end of the first year of operation there were 8 miles of track, with 10 cars in operation. The total car mileage was 253,740, the number of passengers carried was 1,812,746, and the gross earnings were $80,461.56. At present the system has the following mileage: permanent double track, 34.9 miles; permanent single track, 0.280; temporary double track, 7.6; temporary single track, 9.5; sidings, 0.211; spurs, etc., 1.0; and terminals, Y's and loops, 0.3—a total trackage of 53.9 miles. Of this 29.3 miles were built during 1913, as were also the elaborate car barns at Cromdale, where 60 cars can be accommodated. The rolling stock consists of 79 p.a.y.e. passengers cars, 7 work and street sprinkling cars, and 2 street sweepers. During 1916 the car mileage was 2,031,490; number of passengers carried 10,564,799; and gross receipts $520,255.40. In order to meet operating charges and capital charges, which amounted to $146,970.19, the city's general funds were called upon to provide something over $120,000. The total deficiency, which has had to be met by the tax payers to the end of 1916 is $700,000. The total debenture debt for the railway at the end of 1916 was $3,074,856.20, against which there is a balance at the credit of the sinking fund of $366,698.82. The interest charges are $146,970.69, and the fixed charges for repayment of principal are $86,140.65.

300 h.p. rotary snow plough, Levis County Ry., operating in 9 ft. of snow

These facts and figures have been brought out in the course of the controversy now going on in the city as to the prospects of the railway. It is pointed out that the cost of operation was reduced during 1916 from 21.5c a car mile to 18.4c, and it is claimed that with continued economical management, and an increased population, the expenses will ultimately be met. Others claim that there has been unfairly charged against the railway, the cost of paving the 4 ft. strip between tracks, and for some time the railway was charged with the entire cost of maintaining this strip. This has now been reduced to 25% of the cost. Power costs over $100,000 a year, on the present basis.

J. H. Moir, Superintendent, estimates that with an additional 5,000 passengers a day the railway would be self-sustaining. In referring to the question of one-man cars, he says: The era of their general adoption on street railways is not far distant. However, he sees difficulties ahead of the scheme when applied to the Edmonton system, where the basis of traffic is the rush-hour long haul period to the outlying residential points. On some of the lines railway tracks must be crossed, and extra precautions would have to be taken by means of watchmen. Furthermore, the scramble for cars in the rush hours, owing to the exodus to the outlying portions of the city, already taxes the resources of the two-man cars. In the event of half the present schedule being operated with one-man cars, the saving in wages would not amount to more than $27,000.



End of reconstructed sweeper, Levis County Ry., showing steel underframe

Reconstructed sweeper, Levis County Ry., after a snow storm

H. W. Dyson, who resigned his position as Comptroller, British Columbia Electric Ry., Vancouver, recently, to become General Manager, Yorkshire & Canadian Trust Co., Ltd., there, went to Vancouver from England in 1910, as assistant to George Kidd, then Comptroller, now General Manager. Mr. Dyson was appointed Comptroller in 1914.

Additional Cars for Montreal Tramways Company.

As stated in Canadian Railway and Marine World for April, the Montreal Tramways Co. has ordered 100 cars to be built in the United States to be operated in pairs, the first car in each pair to be equipped with four motors, and the trailer car to be equipped with two motors. The value of the new equipment is placed at $1,250,000, and delivery is expected to commence in June. Following are the chief details:

Weight, total	Motor, 43,800 lb. Trailer, 36,740 lb.
Capacity	Motor, 42 Trailer, 45
Bolster centres	Motor, 21 ft. Trailer, 21 ft.
Length over bumpers	Motor, 45 ft. 3 in. Trailer, 44 ft. 3 in.
Length over vestibule	Motor, 44 ft. 3 in. Trailer, 43 ft. 3 in.
Width over all	8 ft. 5 in.
Rail to trolley base	11 ft. 4½ in.
Body	Steel with wood posts.
Interior trim	Cherry.
Headlining	Agasote.
Roof	Arch.
Air brakes	Westinghouse.
Fare boxes	Coleman stationary.
Heaters	Consolidated car.
Lightning arresters	Westinghouse.
Motors	Westinghouse 533-T-4, motor cars, 4; trailers, 2; outside hung.
Control	Westinghouse P.K. multiple.
Couplers	Tomlinson.
Designation signs	Keystone.
Seating upholstery	Rattan.
Trolley retrievers	Keystone.
Trucks, type	76 E.
Wheels	Standard cast iron, 30 in.

The cars will also be equipped with fenders, hand brakes, sanders, heat regulators, etc., and the door signal will be interlocked with the control circuit. The lighting will be by 94 watt lamps with reflectors and automatic compensating device for burned out lamps.

In a recent interview, J. E. Hutcheson, General Manager, stated that the coupling up of single car units into two-car trains is the most effective way to relieve traffic congestion. The factors controlling the transportation of passengers by cars are: speed between stops, number of stops, interference of vehicular and pedestrian traffic, delays at street intersections, time for loading, spacing between car units. The greatest time saving is effected by the use of two-car trains, in the last three mentioned factors. There is no more delay at intersections, two cars can be loaded as quickly as one, and the free headway is doubled, enabling every motorman to move more quickly between stops. The total power of motors per train is 330 h.p., but 600 h.p. can safely be developed for short periods, and 400 h.p. is necessary to operate on the heavier cross town grades. The air brakes are so designed as to provide a high degree of safety, and so that they can be applied to all the wheels of both cars by either conductor or motorman. In case of the accidental separation of the cars, the brakes are automatically applied. The Westinghouse type P.K. control has the advantage of removing from car platforms all heavy current carrying parts, eliminating controller burnouts and circuit breaker flashes, and giving increased space on the platform by the use of a small master controller, and incidentally reducing the weight of the platforms, less car wiring, greater ease for the motorman properly to manipulate the small master controller, thereby avoiding abuse of the motors, greater ease of application of automatic emergency features on master controllers, etc. The control is especially adapted to meet the requirements of service in congested districts. The doors are interlocked with the power system, so that the car cannot be started until all doors are closed. All automatic features on the cars are operated from storage batteries so that their normal operation continues if the power is off, or the trolley leaves the wire. The electric heaters are controlled by a thermostat, and an automatic switch is installed to maintain an even heating in the cars.

In addition to the 25 double equipments of type 533 40 h.p. motors equipped with the P.K. control, required for the forementioned cars, the company has ordered 25 P.K. control equipments for use with some motors supplied previously by the Canadian Westinghouse Co.

Nipissing Central Railway Annual Report.

Following are extracts from the annual report of this railway for the year ended Oct. 31, 1916, issued by the Timiskaming and Northern Ontario Ry. Commission, which operates it for the Ontario Government.

Assets.

Cost of road	$306,338.12
Cost of equipment	74,290.98
Townsite property, North Cobalt	242,700.20
Working assets	45,383.53
Deferred debit items	2,064.13
Value of franchise	141,383.32
	$812,160.28

Liabilities.

Capital stock	$530,000.00
Advance from T. & N.O.R.	247,639.50
Working liabilities	33,101.35
Deferred credit	4.30
Profit and loss balance	1,415.13
	$812,160.28

Transportation revenue		$109,937.34
Non-transportation revenue		1,460.61
Total operating revenue		$110,397.95
Maintenance of way and structures	$11,248.74	
Maintenance of equipment	4,998.11	
Power	18,556.07	
Conducting transportation	28,821.55	
Traffic	531.40	
General and miscellaneous	10,578.76	
Total operating expenses		74,734.63
Net operating expenses		$35,663.32
Other income		499.95
Total income		$36,163.27
Deductions from income		13,965.82
Net		$22,197.45

Compared with the year ended Oct. 31, 1915, transportation revenue increased $3,478.85; and the other than transportation revenue increased $208.48, while the expenditures increased $183.17, giving a net increased revenue from operation of $3,504.16. The "other income" increased $281.95, making a total increased income of $3,786.11. The deductions from income, which represent rental paid for leased line, increased $6,710.84. The "net result" shows $27.19 less than the previous year. Out of profit and loss $20,000 was paid to the T. and N. O. Ry. Commission.

Traffic Statistics.

Passenger car hours	26,785
Passenger car miles	274,241
Total passengers carried	1,439,896
Average daily receipts	$297.64
Average receipts per car hour—passenger	$3.55
Average receipts per car mile—passenger, cents	0.34.7
Earnings per passenger, cents	0.06½

The Board of Railway Commissioners, on April 17, heard complaints of residents of Chambly and St. Hubert and other points complaining of the fares charged and the service given on the Montreal & Southern Counties Ry. The commission will make an investigation into the company's equipment and facilities for handling traffic before making any order.

How Car Fares are Distributed in Winnipeg.

The accompanying diagram was used by the Winnipeg Electric Ry. recently, in one of a series of advertisements which it has been running in Winnipeg papers, with the following reading matter appended:

"Take a look at the circle! It tells an

CAR EMPLOYEES AND MOTORMEN CONDUCTORS; OF WAGES AND SALARIES
MAINTENANCE & REPAIRS
FIXED CHARGES, INTEREST PAID
CITY OF WINNIPEG TAXES, LICENSES
POWER AND OTHER CAR OPERATING EXPENSES
ADMINISTRATION & ACCIDENT CLAIMS

interesting story, for it represents 4c, or one white car ticket — the average amount paid by Winnipegers for a car ride. And, further, it tells graphically and truthfully just how we spend that 4c, in order that the people of Winnipeg may be served. The darkened portion is the amount of that 4c which the company earns as profit on its service."

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies:

	Feb. 1917	Feb. 1916	8 mths. to Feb. 28, '17	8 mths. to Feb. 29, '17
Gross	$581,555	$572,935	$4,647,475	$4,405,030
Expenses	479,875	476,413	3,875,610	3,839,642
Net	101,680	96,522	771,865	565,388

Toronto Ry., Toronto & York Radial Ry. and allied companies:

	Feb. 1917	Feb. 1916	2 mths. to Feb. 28, '17	2 mths. to Feb. 29, '16
Gross	$932,567	$846,256	$1,935,036	$1,752,606
Expenses	491,351	459,539	1,023,019	931,832
Net	441,216	386,717	912,017	820,774

Toronto Ry.:

	1917	City percentage	1916	City percentage
Jan	$510,053	$ 76,508	$473,784	$68,847
Feb	473,184	70,976	470,704	70,614
Mar	531,080	105,875	518,555	97,237
	$1,514,317	$253,359	$1,463,043	$236,698

Winnipeg Electric Ry.:

	Feb. 1917	Feb. 1916	2 mths. to Feb. 28, '17	2 mths. to Feb. 29, '19
Gross	$280,717	$293,250	$600,662	$590,810
Expenses	202,207	185,000	433,630	374,085
Net	78,510	108,250	167,032	216,725

The New Brunswick Power Co., owning the St. John Ry, informed the St. John, N.B., City Council, April 11, that it could not supply 8 workmen's tickets for 25c as requested by the council but that it was considering the propriety of abolishing the sale of 6 tickets for 25c in favor of a straight 5c fare, and of doing away with certain transfer points.

Windsor, Essex & Lake Shore Rapid Ry. Fire.—A fire in the Kingsville, Ont., car barn, on April 25, badly damaged an electric locomotive and three passenger cars, among other things.

Electric Railway Projects, Construction, Betterments, Etc.

Brantford Municipal Ry.—The Brantford, Ont., City Council's estimates committee expect that $18,314 will be received during the year from the Brantford Municipal Ry.'s operations.

British Columbia Electric Ry.—We are officially advised that the company is not undertaking the construction of any new street car lines at present. It was reported that a mile of new track on the North Burquitlam road, in Burnaby municipality was to be built this year. (Jan., pg. 30.)

Edmonton Radial Ry.—The Mayor of Edmonton, Alta., is reported to have stated recently that the municipal railway's operation in 1916 showed a deficit of $119,607.35, against $105,750.73 in 1915.

Lacombe and Blindman Valley Electric Ry.—The Alberta Legislature has authorized the Government to increase its guarantee of the company's bonds from $7,000 to $14,000 a mile. The guarantee is for 39.1 miles, and the time for the completion of the work is extended until Dec. 31 next. The grading is practically completed for 35 miles, in the direction of Rimbey, Alta. The additional guarantee is to be held for the completion and equipment of the railway. (April, pg. 155).

London and Port Stanley Ry.—It is reported that certain property has been acquired for the railway's purposes in St. Thomas, Ont., with a view to the erection of a building, for offices, and station purposes at the north-east corner of Talbot St. (April, pg. 155.)

Moncton Tramways, Electricity and Gas Co.—Negotiations have been resumed between the company and the Moncton, N.B., City Council. As well as with the residents of Sunny Brae and Lewisville, respecting extensions of the company's electric railway. A. B. Coryell, is Superintendent. (Mar., pg. 113.)

The Montreal Tramways Co. is reported to have arranged for re-financing $7,000,000 of notes which become due April 1. The plan is said to involve the issue of new 6% two year notes for $3,350,000, the balance being paid in cash. The issue price of the new notes is reported to have been 98.

Peterborough Radial Ry.—The Ontario Legislature has authorized the Peterborough, Ont., City Council to permit its utilities commission to operate the Peterborough Radial Ry. in the event of its being taken over by the city; to issue debentures to pay for the same without first securing the ratepayers' assent and providing that the utilities commission's powers in respect of the railway shall be defined in bylaws to be passed by the council. (April pg. 155.)

Port Arthur Civic Ry.—We are officially advised that the city's public utilities commission is resurfacing about 2,000 ft. of track on Cumberland St. from Arthur to Bay Sts., Port Arthur, Ont. M. M. Inglis, Manager. (Dec. 1916, pg. 502.)

Shawnigan Water and Power Co.—The Quebec Legislature last session granted the company power to extend its operations in several directions, but inserted the following section: "Notwithstanding anything in the present act contained the company shall not have the power of constructing, acquiring or operating tramways in the districts of Three Rivers and Quebec, the Island of Montreal, or on the south shore of the St. Lawrence, or of conducting electricity within the counties of Charlevoix, Levis and Ottawa."

St. John Ry.—The New Brunswick Power Co., owning the St. John Ry., asked the St. John City Council, April 11, for two years extension of time for laying new pavement on Union St., West St. John. This is a work proposed to be done by the council and if it is undertaken the track section will have to be raised. Commissioner Fisher said he did not favor the postponement. The matter will come up for consideration again.

St. Thomas Ry.—A press report states that the City Council proposes to extend its line on Queen and Centre Streets, St. Thomas, Ont.

Saskatoon Municipal Ry.—Extensions are reported to be proposed, together with the purchase of some extra equipment. It is said that $19,640 has been voted by the city council for this purpose. (Dec., 1916, pg. 502.)

Toronto, Barrie and Orillia Ry.—The Ontario Legislature has refused to grant the company's application for an amendment to its act of incorporation, which would have the affect of extending the time within which it was to be built. The company was originally incorporated in 1910 as the Monarch Ry. Co., the title being changed in 1913. It had power to build a railway from Toronto via Barrie to Orillia. A franchise was obtained for a line in Barrie from the town council and surveys were made for an extension of this line to connect with the C.P.R. at Utopia. No construction has been done. (April, pg. 155.)

Toronto Suburban Ry.—The Ontario Legislature's Committee reported at the recent session that the preamble of the company's bill asking for an extension of time for the building of a number of lines had not been proved and it was ordered that the fees paid, less charges, be remitted. The effect of this is that the authority which the company had to build additional lines has been done away with, and that its lines will consist of those within the City of Toronto, which can be acquired on the expiration of the franchise; the line to Weston and Woodbridge and the newly completed line from Lambton to Guelph. (Feb. pg. 73.)

Transcona Electric Ry.—The bill introduced in the Manitoba Legislature for the incorporation of a company with this title, on coming up for a second reading, met with considerable opposition. The debate was adjourned and was not resumed before the close of the session.

One-Man Cars in Alberta.—An amendment to the Alberta Statute law introduced in the Legislature, April 4, proposed to enact, that in the operation of every street railway or electric railway within the limits of any municipality in the province, every car in its operation shall have a conductor and a motorman. The Lethbridge City Council appeared in opposition, and urged that such legislation would mean an increased charge to on the public to maintain the present services. In Lethbridge, it would be necessary to employ at least 10 additional men to comply with the proposed regulation. The amendment, which was asked for in the interests of the labor party, was withdrawn on the Attorney-General's motion.

Electric Railway Notes.

The Ontario Railway and Municipal Board has approved the Guelph Radial Ry.'s standard freight tariff, which became effective April 15.

The British Columbia Electric Ry. employes in Vancouver make a regular monthly contribution from their pay for patriotic purposes. For March it was $4,800.

The Hamilton St. Ry. according to a press report, proposes to put on cars on certain routes between fixed hours which will run through from point to point, without intermediate stops, in order to relieve traffic on congested lines at busy hours.

London, Eng., street cars and omnibuses are said to have about 2,500 women conductors, nearly half of whom were formerly in domestic service. About a fourth were formerly shop clerks or office workers. One hundred and fifty new women conductors are being employed weekly.

The Independent Labor Party of Hamilton, Ont., passed a resolution April 13, appointing a committee to look into matters relating to the Hamilton, Grimsby, and Beamsville Electric Ry., with a view to asking the city to take it over at one of the periods when it has an option to do so.

The Calgary, Alta., City Council, passed a resolution April 17, declining to endorse a recommendation of the city commissioners that the local union of street railway men be recognized, and directing the commissioners to negotiate an agreement with all the employes of the Municipal Ry. irrespective of any union. The employes of the railway outside the union number, it was stated, 112, being a slight majority of the total number, and they belong to the Calgary Municipal Street Ry. Association.

The Manitoba Legislature has passed an act respecting the examining and licensing of electrical contractors and journeymen electricians. Subsec. 4 of sec. 3 provides that the act does not apply to such work on street railway cars or locomotives or on railway cars or locomotives which are the property of municipal departments or of public service corporations, and where such work is installed by employes under the direction of officers of such municipal departments or public service corporations.

The London Railway Commission has been advised that there is no power under the present laws to assess it for municipal taxation. The railway operates in the cities of London and St. Thomas, the village of Port Stanley and some rural municipalities. As a steam railway provision was made for its taxation, but there is said to be no mention in the act for collecting a business tax on electric railways. Further than this it is claimed that as a municipally owned railway it is exempt from all other municipal taxation.

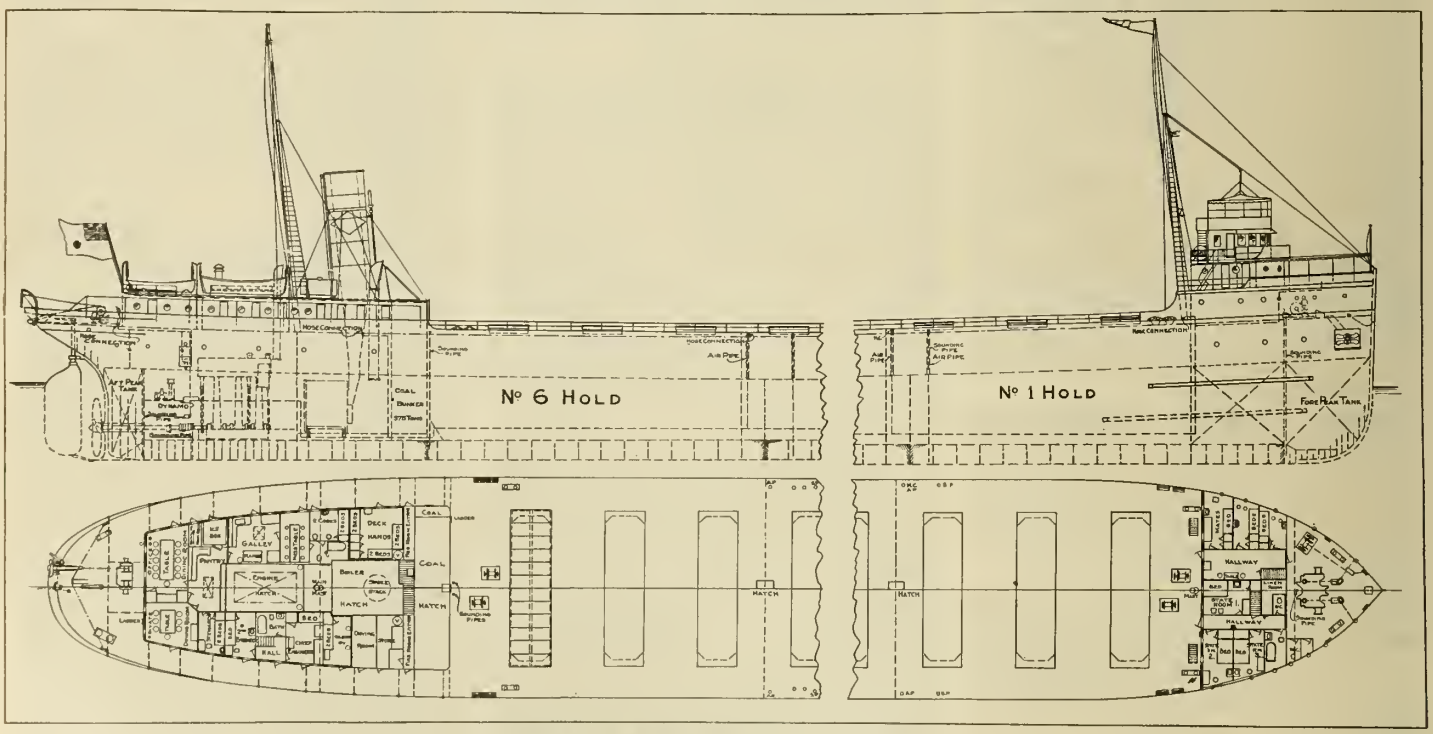
The Galena Signal Oil Co., Franklin, Pa., announces that G. A. Barnes has been appointed Manager, and F. R. Stakelum, Assistant Manager, of its electric railway department, with offices at Franklin.

Electrolysis.—A paper on a street railway negative return system for the mitigation of electrolysis, by L. A. Herdt and E. G. Burr, was read before the Canadian Society of Civil Engineers, in Montreal, April 19.

Marine Department

Launching of Montreal Transportation Co's Steamship Westmount.

The Montreal Transportation Company's bulk freight steamship, Westmount, was launched at the Collingwood Shipbuilding Co.'s yards, Collingwood, Ont., April 5. Among those on the platform, which had been erected in front of the vessel's bow, were: L. L. Henderson, President, Montreal Transportation Co.; Mrs. Henderson, who christened the vessel; Capt. H. M. McMaster, Marine Superintendent, M. T. Co., Kingston; J. S. Bonar, Tug Superintendent, M. T. Co.; Montreal; E. A. Turner, agent, M. T. Co., Kingston; Capt. S. Hill, appointed master of the vessel; H. B. Smith, President, J. S. Leitch, General Manager, and S. H. Lindsay, Secretary, Collingwood Shipbuilding Co., Mrs. Lindsay, M. McD. Duff, Manager, Great Lakes Steamship Service, C.P.R., and Acton Burrows, Managing Director Canadian Railway and Marine World. After the launching, which was most successfully performed, the invited guests were entertained at luncheon by the Collingwood Shipbuilding Co.



Montreal Transportation Co.'s s.s. Westmount

The Westmount, one of the largest vessels ever built in Canada, is of the large single deck type, which has been evolved to meet the conditions prevailing on the Great Lakes in regard to the transportation of bulk cargoes of coal, ore, and grain. Her leading particulars are: Length over all, 550 ft. 8 in.; length on b. f., 537 ft.; breadth moulded, 58 ft.; depth moulded 31 ft.; load deadweight, 11,000 tons; load draught to suit canals, 19 ft. 6 in.

The vessel, in common with others of her class, embodies a number of features introduced to facilitate loading and unloading operations, the short season for navigation on the lakes making quick dispatch in port a matter of the utmost importance. No loading or discharging appliances are provided on board, these operations being accomplished by the shore plant. There are 16 cargo hatchways, each 38 ft. wide, and 9 ft. long. They are spaced 24 ft, apart, centre to centre, to suit the standard spacing of the loading and unloading devices on shore. Between the hatchways strong arch girders, or web frames, extend right round the sections. By the adoption of these girders, stanchions are dispensed with, and the holds left unobstructed, a necessary feature where coal and ore cargoes are unloaded by clam shell buckets, as is the case on the Great Lakes. For the same reason there are no deckhouses, spars or other obstructions for the length of the cargo holds.

The ordinary transverse bottom and side frames are of channel sections and are spaced 3 ft. apart. The double bottom, which is 5 ft. deep, extends for the full length between the peak bulkheads. Side tanks of the same width extend on each side up to the level of the main deck stringer, and thus form a double skin to a height well above the deep load line. The side tanks provide large additional capacity for water ballast, and their inner plating transforms the hold into a compartment of hopper form section, eminently suitable for mechanical unloading operations. The tank top plating, which carries the cargo's weight is supported by the centre girder and by 4 continuous longitudinal girders on each side of the centre line. Intercostal deep floor plates are fitted in the transverse direction at every second frame, i.e., 6 ft. apart, there being a deep floor at each arch-girder and one between.

There are two complete collision bulkheads forward, the space between these forming a deep tank. The cargo hold is divided by screen bulkheads into 6 compartments, and the double bottom by 4 watertight divisions into 5 compartments for water ballast. The remaining bulkheads are a cross bunker screen bulkhead, a screen bulkhead between the engines and boilers, and a watertight after peak bulkhead. The upper deck stringer and plating between the hatch and ship's sides are supported by longitudinal channel girders instead of transverse beams. This arrangement is a new feature in a vessel framed on the transverse system, and has the advantage of introducing additional longitudinal strength at a very desirable part.

A short forecastle is fitted above the upper deck right forward. On the port side, under the forecastle deck, are cabins for the first and second officers, the quartermasters, and watchmen. In a corresponding position on the starboard side, are the owners' staterooms. On the forecastle deck above is a large steel deckhouse, containing an observation room and captain's quarters. The top of this house forms the navigating bridge, upon which stands the wheelhouse. The accommodations provided at the after end of the ship are arranged in a large steel house, surrounding the engine and boiler casing, and comprise the engineers' quarters galley, dining rooms for the owner, officers, and crew respectively, and berths for various members of the crew. The firemen's accommodations are on the main deck, at the starboard side, just abaft the engine room casing.

A powerful steam windlass, of quick-warping direct grip type, is located on the upper deck forward under the forecastle. The cables are 2¼ in. in diameter, each being attached to a stockless anchor of 8,000 lb. weight. The anchors are stowed in pockets, so that they may not foul lock gates or other obstacles when the vessel is navigating narrow waterways.

The main and emergency steam steer-

ing engines are right aft, on the main deck. Both gears consist of a 9 x 9 in. steam engine which actuates the rudder directly through a toothed quadrant connected to the rudder stock. This gear is controlled by wires led from the steering wheel in the pilot house, or that on top of the same. The emergency gear is always under steam, and can be put into operation in a few seconds, by a crank on the bridge steering standard, which at the same time throws out of action the main gear.

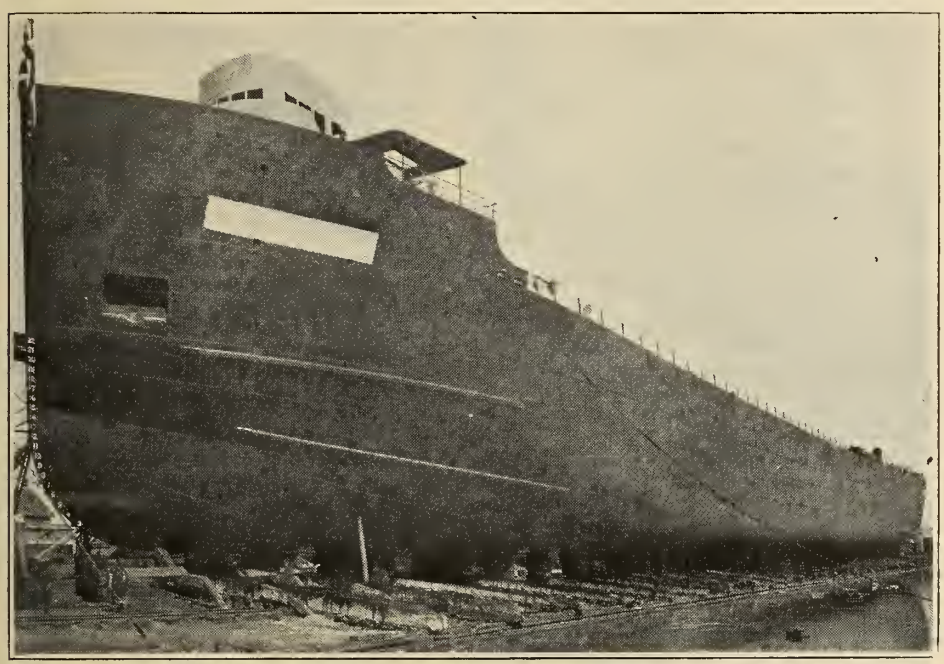
The 6 deck winches, 4 of them 8 x 10 in. single drum mooring winches, are placed two at each end of the row of hatchways. The drums of the mooring winches are arranged in the athwartship direction, fairleaders of special design being provided at the ship's side to lead the mooring ropes. Another 8 x 10 in. single drum winch is located in the windlass room forward, and an 8 x 10 in. winch, with 2 drums, is on the upper deck aft. One drum of the after winch is intended to take the 3½ in. mooring hawsers, while the other takes the 4½ in. wire hawser, which is attached to the stern anchor of 4,000 lb. weight. The latter, which is also of the stockless type, is stowed on an inclined patform, so that it can be instantly lowered in case of emergency.

The boat outfit consists of two 22 ft. metallic lifeboats, and one 18 ft. gasoline launch, for use in harbor, capable of attaining a speed of 8 miles an hour. All the boats are placed aft at the level of the deckhouse top, and are attached to sliding davits and equipped with releasing hooks.

The vessel has 2 steel pole masts, one forward and one aft, for signalling purposes, and to carry the running lights. Awnings are fitted over the forecastle deck, and the pilot house, and at the sides of the after deck house. Draught gauges are provided at each end of the ship, so that the draught forward and aft may be read in disturbed water or at night.

The ship is lighted throughout by about 200 electric lights. Two electric generators, each having a capacity of about 10 kilowatts, are situated on a flat at the after end of the main engine room. An electric indicator is placed in the pilot house, to show whether all the running lights are in order.

The propelling machinery, which has also been built by the Collingwood Shipbuilding Co., is at the after end of the vessel. Steam is generated by 3 single ended cylindrical boilers of Scotch marine type, each having a diameter of 13 ft. and a length of 11 ft. The boilers are designed for a working pressure of 185 lb. per sq. in. and are provided with forced draught. From the boilers the steam passes to a single set of triple expansion reciprocating engines, having cylinders 24, 40 and 66 in. in diameter respectively, by 42 in. stroke. The engines are capable of developing about 2,400 i.h.p., which will drive the ship at a speed of about 13 miles an hour in loaded and 15 miles an hour in light condition. The auxiliary machinery includes 1 centrifugal and 2 duplex ballast pumps, 1 sanitary pump and deck pump, 1 duplex main feed pump, and 1 duplex auxiliary feed and fire pump. The air, circulating, and bilge pumps are directly driven from the main engines. In addition to the steam pumps, hand bilge and fire pumps are provided both forward and aft.



Montreal Transportation Co.'s s.s. Westmount prior to launching.

Proposed Channel in St. Clair River.—The International Joint Waterways Commission has under consideration an application, endorsed by U.S. War Office engineers, for the right to make a channel about 400 ft. wide, and of proper depth, along the water front at Port Huron, Mich., and to build a compensating dam under water a little below this point in the St. Clair River, so as to maintain the levels of Lakes Huron and Michigan. The proposed works are considered to be beneficial to the navigation of a difficult part of the river, and the principal matter for consideration is the probable effect on the water levels above and below. Expressions of opinion by the organizations concerned are being sought.

Vessels Registered.—The lists of vessels registered, which were until recently published in each issue of Canadian Railway and Marine World, are not now available, their issue having been suspended in consequence of the war.

Outturns of Grain Cargoes on the Great Lakes.

In connection with the Board of Grain Commissioners' regulations regarding outturns of grain from vessels in Canada, the Dominion Marine Association had an interview with the Board at Montreal, April 12, when a satisfactory arrangement was made. Some of the receiving houses objected to the old regulations, more particularly to those dealing with outturns of grain other than wheat. A compromise settlement was made on the basis of a contribution of 15 lb. on all grains other than flax, instead of a quarter of a bushel as hitherto, and this was accepted by all parties. This leaves the arrangement for wheat as before, but substantially raises the contribution for other grains.

A conference was also had with the Buffalo Grain Clearance Corporation, at Buffalo, N.Y., April 11, representatives being present from the Lake Carriers' Association, as well as from the Dominion Marine Association. It was unanimously resolved that the corporation be continued and that it should carry on the service hitherto furnished to vessels. The following outline of the plan for continuing the service was proposed:

1. The contribution of the vessels shall be on the basis of ½ bush. per 1,000 bush. from and to all ports.

2. In order to provide funds for operating and for the purposes mentioned in clause 4, the vessels shall respectively pay $200 on first arrival with grain cargo, subject to this contract. (Majority opinion seems to be that this item should be a fixed amount, but may be on a sliding scale, based on capacity of vessels or other conditions.)

3. The 12c and 24c of the former contract may be increased to 15c and 30c.

4. Such contribution on first arrival shall be evidenced by receipt showing terms on which contribution is made, substantially that such contributions are to be repaid as soon as practicable after close of season, subject to the deduction of such amount from each contribution as may be necessary to give the corporation a sum, including its surplus earnings, sufficient to repay the voluntary contributions already received this year from carriers; to pay the deficit of 1916, excluding capital; and to pay back to the corporation a quarter of its exhausted capital.

5. This agreement is for one year only and any surplus earnings over refunds and total deficits shall be credited pro rata to the subscribers of 1917, and new arrangements made for 1918.

These terms were unanimously approved by the Dominion Marine Association representatives, at Montreal, April 12, and were ratified at Buffalo, April 16.

Admiralty Dry Docks for Canada.—A London, Eng., press cable of April 20, says: "Hon. Robt. Rogers, Canadian Minister of Public Works, has taken up the question of building Admiralty drydocks at Esquimalt and Halifax with Sir Edward Carson, First Lord, and Bonar Law, Chancellor of the Exchequer, and is seemingly hopeful that something will result. Canada is entitled to this consideration, says Mr. Rogers, not only owing to the part she has played in the present war, but because of the efforts of the Canadian Government to encourage shipbuilding in Canada. There should be no reason why British ships when in Canadian waters should go to United States ports for repairs."

Shipping Letters from the Head of the Great Lakes.

F. & W. Jones, lake transportation brokers, etc., Fort William, Ont., wrote on April 14 as follows:

Ice conditions are still somewhat severe at the Canadian head of the lakes. In Thunder Bay ice is thicker than has been known during the past 10 years. Where tests have been made it is reported as 48 to 50 inches. The icebreaker James Whalen went into service on April 10 and has done good preliminary work. A passage has been cut past the Welcome Islands which will be kept open from now on thus allowing the ready movement of ice floes, as the ice breaks up and moves out. Ice in the Kaministikwia and Mission Rivers is unchanged at from 3 to 4 ft. thick and quite solid. Ice breakers, however, are ready to open up passages as soon as conditions are favorable or vessel requirements demand. Advices here agree that it will be early in May before navigation at those ports can be considered open, probably May 1 to May 5. There are only four Canadian and one U. S. vessels wintering here, all of small tonnage capacity. These are all practically to clear at a few days notice.

Coal.—Stocks, both bituminous and anthracite, at all docks are greatly depleted, this is more particularly so with regard to commercial coal. At one time it was a serious question whether stocks would hold out. Dealers, however, have been conserving their stocks during the greater part of the winter, sharing out deliveries to retailers proportionately, in a manner to best secure an equal division of the supplies on hand from time to time. This has undoubtedly worked out well in effect and while shortage of coal has been experienced at some western points no serious complants have developed. No great rush of coal cargoes is expected at the immediate opening of navigation. Usually at this time docks are in possession of advice of their early prospects, but up to date no advices have come to hand and enquiries do not show that any very substantial contracts have been placed for commercial coal for early arrival. There is certainly nothing indicative of any great movement for the opening. It will, however, be necessary to bring in a large quantity of coal, both bituminous and anthracite, during the whole season of navigation to replenish depleted stocks and provide for next winter's demand.

Grain.—The all rail winter movement of grain has been disappointing, approximately only 13,000,000 bush. of all grains have gone forward since the close of navigation on Dec. 12, up to the time of writing. The normal capacity for railway movement of winter grain is from 20,000,000 to 30,000,000 bush. There should therefore have been nearly double the amount moved than has been moved. Demand for grain has been good throughout, notwithstanding the high prices ruling from time to time, but shippers have been seriously hampered by the continual car shortage and embargoes by the railways. These embargoes have been largely due to congestion at the seaboard. Had it been possible to move grain freely from ocean points to Europe, conditions would in a measure have righted themselves and car shortage would not have been so evident. There has also been a very heavy movement of munitions and war supplies eastbound, which in itself would account for the absorbing of a great number of cars. The actual figures of winter movement are as follows: Wheat, 6,360,080 bush.; oats, 5,712,728 bush.; barley, 162,662 bush.; flax, 333,484 bush.; mixed grain, 575,658 bush.; total, 12,944,612 bush.

Elevator stocks at Fort William and Port Arthur at date of writing are as follows: Wheat, 23,109,035 bush.; oats, 10,140,137 bush.; barley, 1,318,379 bush., flax 1,624,270 bush.; total, 36,191.821 bush. There is estimated to be still in farmers' hands and in storage west of Fort William and Port Arthur some 50,000,000 bush. of wheat and possibly 20,000,000 bush. of other grains to come forward. This would make a total of approximately 100,000,000 bush. of all grain in sight at date, available for lake movement. It is expected that the British Government movement of grain at the opening of navigation will be somewhat heavy, possibly 10,000,000 to 12,000,000 bush. Other shippers will in all probability require to move a like quantity. So the demand for space is likely to be maintained. Nothing further has developed wtih regard to the proposal of the British Government to purchase the surplus stocks of Canadian wheat at a fixed price, which offer failed to mature. Many conjectures are afloat but nothing reliable is really known, it is however generally thought amongst those usually well informed that the government purchases will continue to be made along former lines. If any change is made it will probably be of a somewhat drastic nature and based upon lines demanded by war emergencies, but the trade feels confident that every consideration will be given to trade interests.

Ore.—The movement of iron and copper ore from these districts has been moderately but surely developing and activity has been much in evidence at the —several mining centres. Steady shipments of copper ore have gone west throughout the winter with most satisfactory results. The movement of iron pyrites by lake last season was approximately 70,000 tons. This season it will probably be twice that amount. The mining situation in Thunder Bay district has acquired considerable impetus, a large number of fresh claims have been registered during the past few months and many of the old claims are getting ready for re-operation, the minerals mostly in evidence being iron pyrites, copper, silver and gold.

The shipbuilding industry at these ports is showing great activity in common with all other shipyards. The Port Arthur Shipbuilding Co. is running at full pressure and arrangements are under way whereby the capacity will shortly be doubled and at its increased output there are in sight sufficient orders to keep it fully occupied for several years.

Radio Time Signals at the Panama Canal.—The U.S. Navy Department has installed at the Darien radio station a time transmitting clock arranged to send time signals by radio. It is adjusted daily to Washington observatory time by radio signal, with a maximum error of five-tenths of a second, but ordinarily not exceeding one-tenth. The signal begins at 12.55 p.m., 75th meridian time and continues for 5 minutes. The wave length used is 4,000 metres and is so sent that any ship with ordinary commercial receiving apparatus capable of tuning as high as 4,000 metres should be able to receive it.

The Sale of the Icebreaker J. D. Hazen to Russia.

The Auditor General's report, in dealing with expenditures for the year ended Mar. 31, 1916, criticizes expenditures on the icebreaker J. D. Hazen, which was built by Canadian Vickers, Ltd., Montreal, and eventually sold to the Russian Government. It is stated that the contract was entered into between the Dominion Government and Canadian Vickers, Ltd., in Mar., 1914, the price being $998,583. On Aug. 25, 1916, the Auditor General wrote the Deputy Minister of Marine, calling attention to the fact that the Marine Department proposed to release the contractors, in order to enable them to sell the vessel to the Russian Government. At that date payments on progress estimates were $349,504. The letter continued: "You are aware of the fact that the cost of construction of vessels has increased probably 35 to 40% since the making of this contract, and in cancelling the same the Dominion Government would be parting with a valuable asset, and I do not see how you can justify the placing in the hands of Canadian Vickers, Ltd., an opportunity to make a profit of possibly $300,000 or $400,000. If it is intended as a friendly act to one of the allies to give them the benefit of such an excellent contract, I would suggest that the constructing company be not released, but that the contract be assigned to the Russian Government, unless it is ascertained that the price to be paid by them to Canadian Vickers, Ltd., is not in excess of the contract with the Dominion Government."

The Auditor General also asked for information as to the terms and conditions of the sale, but had received no reply when the report was written.

United States Shipbuilding Programme.

It is announced that the U. S. Government has authorized the immediate construction of a large number of steamships for trans-Atlantic service. The whole matter is in charge of the U.S. Shipping Board, which is taking up the task of organizing the necessary material and labor and distributing the work to the best advantage. The reports state that it is planned to build, if necessary, 3,000 wooden steamships of approximately 3,000 tons each, the first 1,000 to be completed and in service within 18 months. These vessels are to be engined for a speed of about 10 knots an hour. It is the intention to standardize construction, as far as possible, to expedite construction, and when they are ready for operation, the board will either sell, charter or operate them, as may be desirable. Work is reported to have been commenced at several yards. Each vessel will be equipped with anti-submarine guns and wireless telegraph.

The U. S. Navy Department received tenders during April for 34 submarines. Congress has authorized the construction of 38, and 10 have already been ordered at Portsmouth, N.H. The Electric Boat Co. submitted an offer to build 18 vessels in from 16 to 26 months at $1,524,000 for those built on the Atlantic coast, and $1,592,000 for those built on the Pacific coast, or as an alternative to build on a cost plus 15 profit basis. Other offers named prices of $1,288,000 and $1,299,000 and most of them were accompanied by the alternative cost and percentage basis.

Coast, Lake and River Steamship Officers for 1917.

The following appointments, made by navigation companies, engaged in Canadian navigation, for their various steamships and tugs, have been reported to Canadian Railway and Marine World, in addition to those given in the April issue. The first column shows the names of the vessels, the second those of the captains, and the third, those of the chief engineers.

BUTLER FREIGHTING AND TOWING CO., VICTORIA, B.C.

Grainer	D. F.Butler	H. Soper

CANADIAN GOVERNMENT RAILWAYS, MONCTON, N.B

Leonard	Jas. Couette	E. R. Roy
Northumberland	A. Cameron	C. Cuming
Prince Edward Island	J. J. Murchison	L. R. Unswort
Scotia No. 2	L. R. Maguire	W. Anderson B. Scott

C. P. R. BRITISH COLUMBIA LAKE AND RIVER SERVICE, NELSON, B.C.

Bonnington	A. Forslund	J. Fyfe
Hosmer	M. McKinnon	P. H. Pearse
Kokanee	W. H. Wright	J. G. Cameron
Moyie	A. J. McDonald	W. Edwards
Naramata	J. B. Weeks	W. Jacobs
Nasookin	W. Seaman	T. F. McKechnie
Sandon	M. P. Reid	D. McLeod
Sicamous	G. Robertson	D. Stephens
Slocan	W. Kirby	D. H. Biggam
Valhalla	Jas. Ferguson	T. C I'Anson

COAST STEAMSHIP CO., VANCOUVER, B.C.

Celtic	John Finlay	H. Buxton
Clansman	C. Anderson	H. Nissen
Coaster	M. F. MacDonald	D. MacDonald

GLOUCESTER NAVIGATION CO., CARAQUET, N.B.

Beaver	F. Hache	E. Haveland

GASPE AND BAIF DES CHALEURS STEAMSHIP CO., QUEBEC, QUE.

Gaspesian	J. Vezina	N. Protomastro

GRAND MANAN STEAMSHIP CO., GRAND MANAN, N.B

Grand Manan	J. A. Ingersoll	J. F. McGray

GREAT LAKES DREDGING CO., PORT ARTHUR, ONT.

Curlew	H. Friday	C. Kennedy
E. C. Whalen	J. Friday	C. Saunders
J. D. Morrison	A. McDonald	N. Taylor
Salvor	H. Gehl	B. Debenardi

W. HANNA AND CO., PORT CARLING, ONT.

Mink	W. H. McCulley	.....
Newminko	J. J. McCulley	J. S. Barry

KEENAN TOWING CO., OWEN SOUND, ONT.

Keenan	J. H. Rutherford	W. Owens

MIDLAND TRANSPORTATION CO., MIDLAND ONT.

C. W. Chamberlain	W. Staker	G. Kerr
Lucknow	A. Cuff	H. Schmidt

MIRAMICHI STEAM NAVIGATION CO., CHATHAM, N.B.

Alexandra	Jas.Nowlan	Jas. Walls
Miramichi	J. P. Bullick	N. Smith
Sybella	H. Copp	A. Mcintyre

MONTREAL TRANSPORTATION CO., MONTREAL

Advance	J. V. Norris	M. J. Sherman
Bartlet	A. Ferguson	F. Moyle
D. G. Thompson	A. Lepine	R. Hepburn
Emerson	W. Murphy	J. G. Lamoureu
F. H. Bronson	L. Mallen	J. Tuttle
Glenmount	Jas. Reoch	J. B. Lappin
Glide	N. Desgroseillier	G. W. Clark
India	A. Lepine Jr.	F. Brian
M. P. Hall	T. Lepine	H. Paus
Mary	W. J. McKenna	P. J. McKenna
Simla	C. E. Coons	D. S. Simons
Westmount	S. Hill	F. Norris
Windsor	John Doyle	A. Dunn

NORTHERN NAVIGATION CO, SARNIA, ONT.

Hamonic	A. L. Campbell	John Smith
Huronic	A. M. Wright	J. McLeod
Noronic	R. D. Foote	S. Brisbin
Waubic	John Dube	U. Brisbin

NORTH VANCOUVER FERRY CO., NORTH VANCOUVER, B.C.

North Vancouver No. 1	W. Fatke	I. N. Kendall
North Vancouver No. 2	R. R. Spicer	D. Becker
North Vancouver No. 3	J. W. Spracklin I. Butler	J. W. Whitworth

PLUNKETT NAVIGATION CO., COBOURG, ONT.

Jas. W. Follette	H. Redfern	John McFaul

PORT COLBORNE TUG CO., PORT COLBORNE, ONT.

J. V. O'Brien	D. McGarth	.....
Meteor	Jonh McGarth	.....

PORT HURON AND SARNIA FERRY CO., PORT HURON, MICH.

Grace Dormer	P. G. Powrie	J. Kinirie
Hiawatha	E. M. Thomas	H. Myers
James Beard	G. Waugh	G. Miller
Omar D. Conger	W. S. Major	R. Cameron

PRESCOTT AND OGDENSBURY FERRY CO., PRESCOTT, ONT.

Miss Vandenburg	S. Delaney A. Black	W. Jento

ROSS NAVIGATION CO., PAS, MAN.

Minasin	A. Deacon	T. Paquette
Nipawin	H. H. Ross	J. Shannon
Sam Brishin	H. L. Weber	H. Carefoot

SAULT SHIPPING CO. LTD., SAULT STE. MARIE, ONT.

Valcartier	J. A. Brown	J. G. MacHattie

ROYAL MAIL STEAM PACKET CO., HALIFAX, N.S.

Caraquet	W. H. Lainson	W. Hobson
Chaleur	T. A. Hill	P. Tubbs
Chaudiere	F. G. L. Willen, R.N.R.	R. L. Bennee
Chignecto	C. Adam, R.N.R.	W. J. Mitchell

STEAMER PREMIER, E. STUBBS, MANAGER, SAULT STE. MARIE, ONT.

Premier	W. Hyland	J. Howson

TERMINAL STEAM NAVIGATION CO., VANCOUVER, B.C.

Ballena	J. A. Cates	A. Pirie
Bowena	F. W. Gilbert	Jas. Adams
Britannia	J. W. Cates	C. McFarlane

CITY OF THREE RIVERS, QUE.

Le Progres	W. W. Lewis	A. Frenette

UNION STEAMSHIP CO. OF BRITISH COLUMBIS, VANCOUVER, B.C.

Camosun	J. A. Browne	A. Beattie
Cassiar	G. Whalen	P. J. V. Farina
Cheakamus	G. Gaisford	N. Tweedie
Chelohsin	J. F. Edwards	G. H. Foster
Comox	R. Wilson	A. T. Roy
Coquitlam	N. Gray	J. Maitland
Cowichan	C. Moody	L. P. Thomas
Venture	J. E. Noel	C. Arthur

UNITED STATES AND DOMINION TRANSPORTATION CO., CHICAGO, ILL.

America	E. C. Smith	F. McMillan
Easton	G. Eye	.....

VALLEY STEAMSHIP CO. LTD., ANNAPOLIS ROYAL, N.S.

Granville	C. W. Collins	J. McCollough

WALKERVILLE AND DETROIT FERRY CO., WALKERVILLE ONT.

Ariel	W. H. Corr	H. Andersn
Essex	J. E. Rathbun	P. McLaren

WEST VANCOUVER FERRY CO., VANCOUVER, B.C.

Doncella	D. Smith	R. Pine
Sonrisa	J. Watson	J. G. Gale
West Vancouver No. 5	.....	W. E. Thompson

WESTERIAN TRANSPORTATION CO. LTD., OTTAWA, ONT.

Westerian	A. Lefebvre	J. Lavallie

WINDSOR AND PELEE ISLAND STEAMSHIP CO., PELEE ISLAND, ONT.

Pelee	J. N. Sheats	J. R. Ferguson

Saskatchewan River Navigation.

A considerable amount of freight is expected to be moved this year on the Saskatchewan Rover to Pas, Man. The Ross Navigation Co., Ltd., has contracted to carry 3,000 tons of copper ore for the Mandy Mining Co., from Sturgeon River to Pas. Specially constructed barges are being built for handling the ore. Teams have been engaged all winter hauling the ore from the mine to Sturgeon River, where it is to be loaded on to the barges, and the 3,000 tons are all ready piled up there, awaiting the opening of navigation.

The Ross Navigation Co. is also building a stern wheel steamboat 85 ft. long, which will be ready for the opening of navigation. It will handle package freight and passenger traffic, from Pas to the various ports of call on the Saskatchewan River and adjoining lakes. It is the company's intention to establish a freight and passenger service between Pas and the farming settlements along the Saskatchewan River, 200 miles west of Pas. That district has been settled up and farmed for the past 10 years, but owing to the great distance from the railways the progress that should have been made has been retarded.

Possible Requisition of Steamships.—There was a general report during April, to the effect that the British Government had decided to requisition all British vessels, freight and otherwise, and that this would affect about 25 vessels from Canada now engaged in ocean service. It was stated that should the British Government actually decide on this course, the Canadian Government would follow and requisition all vessels on the Great Lakes, utilizing such of them in ocean service, as were fit for the purpose, at a fixed rate. As stated in our last issue, the British Government announced some time ago, that no Canadian vessels would be requisitioned, except through or by the Canadian Government.

Encouragement of Shipbuilding in Nova Scotia.

The Premier of Nova Scotia introduced a bill into the Legislature recently providing for the encouragement of shipbuilding in the province. The bill provides for a shipbuilding commission of five members and a secretary to investigate the facilities for shipbuilding in the province and for the manufacture of articles incidental thereto, and to make suggestions for the adoption of rules and regulations to facilitate the development of such industry. The commission is to be empowered to engage technical assistance, and to make arrangements with other similar commissions or departments in Canada, to work together, and it may be created a corporate body under the name of the Nova Scotia Shipbuilding Commission, with all the powers of a corporation. If so formed, it will have power to build, purchase and own vessels, or acquire shares in same, and to operate vessels of all kinds, to establish shipbuilding plants, to purchase existing undertakings for shipbuilding purposes, and to promote and finance companies for such purposes. Power will also be given the commission to issue bonds and other securities, and for the purpose of establishing the commission, the government will be authorized to raise $2,000,000 by the issue of debentures or consolidated stock of the province, for the expenses of the commission, and for subsidies granted to any company engaged in the building, equipment or operation of ships.

Dominion Government Vessels for Ocean Service.

Canadian Railway and Marine World for April stated that the Dominion Government had ordered from Wallace Shipyards, Ltd., North Vancouver, B.C., a wooden sailing vessel, with auxiliary power, for service between Pacific and Atlantic coast ports, via the Panama Canal. We are officially advised that this vessel will be similar, in every respect, to those now being built in the same yards for Canada West Coast Navigation Co., and that an order for a second one of the same type will be placed by the Government very shortly.

The vessel will be of the five masted schooner type, without top sails, and of the following dimensions: length over all 255 ft., length of keel 225 ft., depth moulded 21 ft. 4 in., breadth, extreme, 44 ft. The gross tonnage will be about 1,500 tons, and the dead weight capacity about 2,500 tons, with a lumber carrying capacity of 1,500,000 ft. b.m. The latest and best practice of builders of U.S. schooners designed for the lumber trade will be followed, and it will be of heavy construction. It will be provided with 2 large hatches, and 4 cargo winches of the latest type for the rapid handling of cargo. The power equipment will include two 160 h.p. Bolinder semi-Diesel engines, driving twin screws.

The Ville Marie Navigation Co., Ltd., has been incorporated under the Quebec Companies Act, with $45,000 capital, and office at Ville Marie, Que., to carry on a general navigation business on inland waters in the county of Pontiac, and to own and operate steam and other vessels. The incorporators are: R. Filteau, P. Ethier, A. Jolicoeur, A. Renaud, Ville Marie; A. A. Cote, St. Brune des Guigues: W. Chenier, E. de la Chevrotiere, and A. E. Guay, Ville Marie.

Atlantic and Pacific Ocean Marine.

The Cunard Steamship Co. is reported to be arranging to place orders in the U.S., for the building of 114 passenger steamships, ranging from 8,000 to 17,000 tons, at an estimated cost of $120,000,000.

A. B. Mackay, Hamilton, is stated to be planning the construction of a wooden vessel for ocean service at a cost of about $200,000 He was responsible for the recent construction of the schooner Letitia T. Mackay at Meteghan, N.S., which is now in ocean service.

It is stated that the British Government has requisitioned 50% of the space on the C.P.R. steamships Empress of Russia, Empress of Asia, Empress of Japan and Monteagle. It is said that this action does not affect outward traffic. We are officially advised that the company has received no notification to this effect.

The Osaki Shosen Kaisha of Japan has two 10,000 ton steamships approaching completion at Nagasaki. It is stated that they are to be named Victoria Maru and Vancouver Maru, and placed in service between Japan and Pacific ports on this side, by October or November. They will be equipped for a speed of 12 to 14 knots an hour, and will have accommodation for 12 cabin and about 200 steerage passengers.

A new York press dispatch states that what is said to be the first British steamship to be launched in the U.S. went down the ways at Staten Island, April 7, and was named War Captain. She is owned by the Cunard Steamship Co., and is of the following dimensions: length 274 ft., beam 42 ft., depth 24 ft.; tonnage 3,500 gross, 2,200 register. She is to be used for freight and is expected to be in operation during June.

The s.s. Trans Os Montes arrived at New York, April 2, from England, under charter to the Quebec Steamship Co., a subsidiary of Canada Steamship Lines, Ltd., for service between New York and Bermuda. She was formerly the Norddeutscher Lloyd s.s. Buelow, and along with other enemy steamships, took shelter from the British in Portuguese ports on the outbreak of war. On Portugal joining the "entente allies," she seized all enemy vessels in her ports, and subsequently handed them over to Great Britain for operation. The British Government then arranged with Furness Withy and Co. for their charter and management.

Maritime Provinces and Newfoundland.

Pugsley's Shipping, Ltd., Eatonville, N.S. and Artisan Shipping Co., Ltd., Lunenburg, N.S., have been removed from the register of companies in Nova Scotia for non-compliance with the Companies Act requirements.

The Canada Atlantic and Plant Steamship Co. is reported to have sold its s.s. Halifax to New York parties. The sale of the s.s. Evangeline has already been reported, so that at present the company appears to be without vessels, and it is not known whether it will resume its service between Halifax and Boston or not.

In connection with the St. John harbor improvement works, W. Murdock, City Engineer, St. John, N.B., in his annual report, suggests that a new dock site be selected at Rodney slip, and extend 2,000 ft., reaching the upper end of Navy Island. It is claimed that this site is well in from storms and entirely free from ice and strong currents, and would give 3,800 lin. ft. of wharf frontage, with 35 ft. depth of water.

It is reported that tenders will be called for shortly, for the extension of the Negrotown Point breakwater to Partridge Island, N.B., and for the building of a sea wall to the eastward of the island. It is stated that work on this will be commenced as soon as the contracts are awarded, and the whole completed as soon as possible. The plans and specifications have already been completed. It is also stated that plans and specifications are under way for a new start on the dry dock and other improvements at Courtenay Bay, St. John.

The International Shipbuilding Corporation, Ltd., incorporated recently with $2,000,000 capital and office at Montreal, is reported to have purchased a sawmill, planing mill and foundry at Newcastle, N.B,, and it is stated that it will commence the building of wooden vessels there about June. It is also stated that the company is having surveys made in Newfoundland for ore, and that it is the intention to establish a steel industry at Newcastle in connection with the shipbuilding industry, so that eventually steel vessels will be built there as well as wooden ones.

As throughout Canada, shipbuilding in Newfoundland is proceeding as rapidly as possible, in order to make good the losses entailed by the unrestricted submarine warfare practised by the enemy, and to meet the extra demands being made on shipping in general, on account of the war. Naturally the vessels under construction are sailers, in the construction of which Newfoundland was one of the pioneers. Six vessels are under construction on the southwest coast, in addition to a number of small schooners under 40 tons. These are mainly for the transportation of fish, in which Newfoundland had a large trade with Mediterranean ports prior to the war, and in which she has suffered severe losses.

Province of Quebec Marine.

The schooner Montmorency opened the navigation season in the St. Lawrence, April 3, when she arrived at Levis, from Tadousac, Some ice was encountered but the voyage was made without difficulty.

The icebreaking work of the Dominion Government steamers in the St. Lawrence River, was interfered with during April, owing to a strike of firemen on board the s.s. Lady Grey for higher wages. The work was continued by the s.s. Montcalm.

The Lachine Canal was emptied April 7, and filled again on the following day, the customary inspection of the locks being postponed. Owing to the exceptionally high level of the river, it was not possible to drain the canal completely, and high water was expected to continue for several days, and to hold the canal empty for so long would have caused considerable inconvenience to manufacturers dependent on it for power.

Vincent A. White Navigation Co. Ltd. has been incorporated under the Dominion Companies Act, with $32,000 capital and office at Sussex, N.B. to own and operate steam and other vessels and other marine property and conduct a general navigation business. Meredith A. White Navigation Co. Ltd., has also been

Ontario and the Great Lakes.

The Port Arthur Shipbuilding Co. is reported to have increased the wages of all its employes by 10%.

The Welland Canal was opened to navigation April 18, the s.s. Natironce was the first vessel to pass through.

The Goderich Dry Dock and Shipbuilding Co., according to a press report, proposes building a ship repair . plant at Goderich.

Canada Steamship Lines, Ltd., on representations from the City of Hamilton, has offered to run its s.s. Syracuse from Hamilton on a weekly trip through to the Saguenay, without change, during the coming season.

The Imperial Oil Co. is suing Canada Steamship Lines, Ltd., for $100,000 for damage sustained by the s.s. Imperial, when, it is alleged through negligence, the s.s. Midland Prince collided with it last year.

The s.s. H .N. Jex, owned and operated by J. F. Sewards, Kingston, was the first vessel to enter Kingston harbor this season, coming in from Oswego, N.Y., with coal. Capt. M. Shaw was presented with the customary hat by the harbor master.

The first vessel to arrive in Toronto harbor, this year, from an outside point, was Canada Steamship Lines' s.s. Macassa, from Hamilton, on Mar. 30. Capt. Jas. Henderson was presented with the customary silk hat by the harbor master.

It is announced that the U.S., in providing for the lighting of the Fighting Island channel in the Detroit River, is making a number of changes in the aids to navigation. Permanent lights and buoys are being placed, so as to permit of the channel being used for its entire length as a straight channel without the necessity for range line courses as hitherto.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for March, as follows: Superior 602.33, Michigan and Huron 580.46, St. Clair, 574.79, Erie 571.53, Ontario 245.17. Compared with the average March levels for the past ten years, Superior was 0.76 ft. above; Michigan and Huron 0.55 ft. above; Erie 0.26 ft. below, and Ontario 0.68 ft. below.

It is reported from Detroit, Mich., that the U.S. War Department, which controls the operation of the canal system, has issued a notice that as a protective measure during the war, no power boat, yacht or other pleasure vessel will be permitted to pass through the St. Clair Flats Canal, all such vessels being restricted to the use of the old channel, which will be lighted and buoyed for their service.

The Department of Naval Service has announced that radiotelegraph regulation 104 has been amended by providing that the subsections relative to the disconnection of aerials in vessels lying in Canadian harbors will not, until further notice, apply to Canadian or British vessels in Canadian harbors on the Great Lakes. Such vessels must, however, strictly observe the other provisions of the regulations.

The Hackett Wrecking and Towing Co., Amherstburg, is reported to have sold its steel steam tug F. B. Hackett to New York parties. The vessel is registered in the U.S., and negotiations for its sale to Canadian parties were broken off, as the necessary permission to sell could not be obtained. The cost of the vessel is given as $40,000 when she was built in 1908, and the price now paid for her is said to be $75,000.

The s.s. Mahoning, owned by the Anchor Line, Buffalo, N.Y., is reported to have been sold to Boland & Cornelius, of Buffalo, and it is reported that she is to be cut down to Welland Canal size and operated between Lake Erie ports and Montreal in the coal trade, a trade for which $3 tonnage is being bid. The Mahoning was built at Wyandotte, Mich., in 1892, and is 274 by 40 by 23 ft. It is also reported that the same company's steamships Codorus and Tioga are also being negotiated for.

The Northern Navigation Co.'s s.s. Germanic was destroyed by fire at her wharf at Collingwood, Mar. 30. She was built at Collingwood, Ont., in 1899 of oak, with diagonal strapping on the frames, steel arches, etc., and she was equipped with a steeple compound engine, with 2-17-2-28 cylinders, 21 in. stroke, supplied with steam by a firebox boiler 10 ft. 1½ in. by 12½ ft., at 100 lbs. Her dimensions were, length 184 ft., breadth 32 ft., depth 12 ft. 1 in., tonnage 1014 gross, 676 register.

The s.s. Stadacona, which was reported torpedoed by the enemy off the French coast, April 19, was stated, in the information supplied to the majority of Canadian papers, to be owned by Canada Steamship Lines, Ltd. This, of course, is incorrect, as the company's s.s. Stadacona is at present on the Great Lakes, being included in the list of vessels which the company will operate there this year, and published in Canadian aRilway and Marine World for April. Capt. G. H. Page is master, and W. W. Norcross is chief engineer.

The U.S. District Court of the New York Western District, in Admiralty, has ordered the sale of the s.s. Rochester, owned by the Richelieu & Ontario Navigation Co. of the United States, in satisfaction of claims of approximately $500,000 by a number of members of a convention party from Rhode Island, who alleged that they had suffered serious illness from the effects of drinking impure water whilst on a trip in 1913. The sale was advertised to take place April 17, but was postponed to May 1. The Rochester was for a time operated in lake traffic between U.S. and Canadian ports, and since the end of 1915 has been laid up at Sarnia. It is understood that she is under charter to the Northern Navigation Co., and it is stated that that company will in all probability purchase her. She was built at Wyandotte, Mich., in 1910, her dimensions being: length 246 ft., breadth 42 ft., depth 15½ ft.; tonnage, 1,603 gross, 867 register.

Reports on the ice conditions in the Great Lakes, on April 10, indicated that there was less ice this year at that date, than at the same time in 1916, although it was somewhat heavier in Lake Superior and at the Straits. Ice still continued over the extreme western portion of Lake Superior, with open water off Apostle Islands, and icefields were also in existence from Keeweenaw Point to Whitefish Point. The ice in St. Marys River was decreasing steadily and the fields had practically disappeared along the east shore of Lake Michigan. The s.s. Algoma passed through the ice from Ignace to Detour, April 8, and arrived at Sault Ste. Marie, April 17. The ice fields on the west shore of Lake Huron had disappeared, and those on the east shore were broken up and moving with the winds. In Lake Erie the fields on the east had broken up and were moving, while the ice remained at Buffalo, and westerly. The fields had practically disappeared from Lake Ontario, with slight exceptions in the extreme east, and the harbors were open.

Manitoba, Saskatchewan and Alberta.

We are officially advised that the Peace River Tramway and Navigation Co. has decided, in view of general conditions, not to take any definite action towards providing further transportation facilities beyond its present field of operations on the Peace River, Alta., during the present year. The company will operate its s.s. D. A. Thomas and its launch Lady Mackworth on the Peace River from Hudson's Hope, B.C., the head of navigation on this river, and for 570 miles to Vermilion Chutes, downstream.

The Winnipeg Board of Control had before it recently the Harbor Commisison's request for a grant of $960 for work in the harbor, a request having also been sent to the St. Boniface Council for $240 for similar work. It was decided that the board should have the commission's annual report before making the grant. The Dominion Government has appropriated $200,000 for the work in the harbor, and of this $50,000 has been spent in the erection of a dock at the foot of River St. Two other docks are to be built in the near future.

British Columbia and Pacific Coast.

The C.P.R. s.s. Kokanee, operating on the lakes and rivers, is under repair, her place being taken by the s.s. Kuskanook. The s.s. Minto is replacing the s.s. Bonnington at present.

C. J. Rogers, Purchasing Agent, White Pass & Yukon Route, is credited with the statement that the two vessels which are being built for the company's Atlin service, detatils of which have been given in a previous issue, will be ready for service by June 1.

A small steamboat is reported under construction at the Vandyke Shipyard, Vancouver, for the International Petroleum Co., of Talara, Peru. The dimensions are: length 85 ft., beam 18½ ft., depth 6 ft. It is stated that she will be completed by Aug. 1, and sail for Peru about Aug. 15.

The two car floats which the C.P.R. is having built at Chemainus, by C. Hoard, Victoria, are for operation between Vancouver and Vancouver Island, James Island, Howe Sound and other outlying ports beyond the reach of actual railway connection. They will be 150 x 46 ft., and 12 deep, with capacity for 9 cars each.

An order in council has been passed limiting the speed of any vessel entering or leaving Prince Rupert harbor, to 8 knots an hour between Point Charles and the Canadian Fish and Cold Storage Co.'s

Auxiliary Ship Mabel Brown

Built at North Vancouver, B.C. for Canada West Coast Navigation Co., Ltd., and chartered for a voyage to Australia with 1,534,000 ft. of lumber.

plant, and to 4 knots an hour when passing another vessel with a scow or scows alongside. The penalty for infringement of these regulations is $50 for each offence.

At a meeting of the West Vancouver council at the end of March, it was decided not to discontinue the ferry service for the present, but to give as good a service as possible during the summer. However, should conditions not improve and the receipts not prove more satisfactory, other arrangements may have to be made by the autumn.

The C.P.R. steam tug Nitinat has been chartered by the British Columbia Salvage Co. for salvage work on the Kosmos Line s.s. Seostris, wrecked off Ocos, Guatemala. The company lost the steam tug Pilot there recently while engaged in this work. The Nitinat is being equipped with wireless telegraphy, etc., and as soon as she is ready will leave for the south.

The trial trip of the auxiliary schooner Mabel Brown, the first of a number of similar vessels under construction at Vancouver and Victoria for Canada West Coast Navigation Co., took place at the end of March, and it was announced that everything was satisfactory. She was later docked at North Vancouver for her final touching up, after which she left for Chemainus for her cargo.

The Grand Trunk Pacific Coast Steamship Co. is reported to have purchased the schooner rigged vessel Tillamook, which is equipped with auxiliary power, in the U.S., for service between Prince Rupert, B.C., and Ketchikan, Alaska. It is stated that the vessel is practically a new one, of about 800 tons, arranged chiefly for freight traffic, but with a limited accommodation for passengers. It was expected that she would be in service by the end of April.

The British Columbia Supreme Court decided, April 3, at Victoria, that the s.s. Leona, which capsized and sank near Active Pass in Oct., 1916, was lost in the perils of the sea, and it therefore allowed the claim of the Vancouver Portland Cement Co. for $60,000 with interest, against the Maritime Insurance Co., for loss of the cargo. For the defence it was urged that the vessel was overloaded and therefore unseaworthy, and notice was given of an appeal.

The Canada Atlantic Transit Co. and the Panama Canal Act.—Under the provisions of the Panama Canal Act, railway companies operating in the U.S. are compelled to sever any connection they may have with steamship companies, unless under authority of the Interstate Commerce Commission, which is granted under certain conditions. One of the railways to come under this regulation is the Grand Trunk Western Ry., the western end of the G.T.R., and this company was ordered to sever the connection with the Canada Atlantic Transit Co., a G.T.R. subsidiary. On a rehearing of the case recently, the Interstate Commerce Commission granted the company authority to continue its interest in the Canada Atlantic Transit Co., and found that the C.A.T. Co.'s existing service by water is being operated in the interest of the public and is of advantage to the convenience and commerce of the people, and that an extension of the time for the operation of such service will neither exclude, prevent nor reduce competition on the route by water. The company is required to file its tariffs in accordance with the provisions of the act to regulate commerce as amended by the Panama Canal Act.

Canada Steamship Lines' Appointments.

In accordance with the revised organization for conducting the company's business, the following appointments have been made effective from April 23:

L. A. W. DOHERTY. heretofore Freight Traffic Manager, has been appointed General Traffic Manager, with jurisdiction over freight and passenger traffic. Office, Montreal.

JOHN F. PIERCE, heretofore Assistant Passenger Traffic Manager, has been appointed Assistant Traffic Manager, in charge of freight and passenger traffic, Kingston, Ont., and east, including all passenger traffic originating in the U.S. Office, Montreal.

PERCY GRANT, heretofore Division Freight Agent, Hamilton, Ont., has been appointed Assistant Traffic Manager, in charge of freight and passenger traffic, west of Kingston, Ont. Office, Toronto.

JOHN V. FOY, heretofore Assistant General Passenger Agent, Toronto, has been appointed General Passenger and Freight Agent. Office, Toronto.

J. W. CANVIN, heretofore General Agent, Passenger Department, New York, has been appointed General Agent, New York.

JOS. M. SHEA, heretofore New England Passenger Agent, Boston, Mass., has been appointed General Agent, Boston, Mass.

W. F. CLONEY, heretofore General Agent, Passenger Department, Rochester, N.Y., has been appointed General Agent, Rochester, N.Y.

H. W. CRAWFORD, heretofore District Passenger Agent, Chicago, Ill., has been appointed General Agent, Cleveland, Ohio.

A. C. SHERIDAN, heretofore District Passenger Agent, Buffalo, N.Y., has been appointed General Agent, Buffalo, N.Y.

GEO. S. MEAGHER, heretofore Agent, G.T.R., Clayton, N.Y., has been appointed General Agent, Clayton, N.Y.

C. LEIDICH, heretofore Agent at Detroit, Mich., has been appointed District Passenger Agent, Detroit, Mich.

Vancouver Dry Docks, Ltd.—An announcement of the incorporation of this company was made in a recent issue. It is reported that Charles Meek, who is chiefly interested in the company, has made arrangements for the erection of a plant in Vancouver, to consist of a double section floating dry dock capable of handling vessels up to 18,000 tons displacement, sufficient to accommodate the largest vessels at present on the coast. It is expected that the dock will be in operation within a year, and that it will be worked in connection with an extensive shipbuilding plant. We were officially advised from Ottawa, April 20, that no subsidy agreement had been entered into between the government, represented by the Public Works Department, and Vancouver Dry Docks, Ltd.

Smuggling of Intoxicants at Lake and River Ports.—The Dominion Government has sent instructions to all customs collectors at lake and river ports along the boundary between Canada and the U.S., and at seaports, that they take rigid precautions to stop smuggling of intoxicants on vessels arriving from foreign ports. Complaints have been made that parcels are being brought into Canada without passing through the customs. Collectors are to take drastic action against persons offending, and masters are to be notified that their vessels are liable to detention if used illegally.

The Dominion Government Purchases Lake Steamships.

The Dominion Government has bought the s.s. J. A. McKee, from the Algoma Central Steamship Line, Ltd., Sault Ste. Marie, Ont., and the s.s. Thomas J. Drummond, from the Great Lakes Transportation Co., Midland, Ont., for operation under the Department of Railways and Canals, for carrying coal from Sydney, N.S., to St. Lawrence ports for the Government, or for general cargo purposes as the need may arise.

The s.s. J. A. McKee was built at Wallsend on Tyne, Eng., in 1908, for the Western Steamship Co., Toronto, and is of steel construction with steel tank top, three water tight and two non water tight compartments, steel boiler house, hatches 24 ft. centres, and is equipped with triple expansion engines with cylinders 20½, 33 and 54 diar. by 36 in. stroke, 70 i.h.p., supplied with steam by two Scotch boilers 13½ ft. diar. by 10½ ft. long, at 180 lbs. Her dimensions are, length 248 ft., breadth 43 ft. 1 in., depth 25 ft. 10 in.; tonnage, 2,158 gross, 1,374 register.

The s.s. Thomas J. Drummond was built at Dumbarton, Scotland, in 1910, for the Algoma Central Steamship Line, Ltd., and is of steel construction on the channel system, steel tank top, three water tight and two non water tight compartments, steel boiler house hatches spaced 24 ft. centres, and equipped with triple expansion engines with cylinders 20½, 33 and 54 in. diar., by 36 in. stroke, 1,200 i.h.p., and supplied with steam by two Scotch boilers 14 ft. diar. by 10½ ft. long at 190 lbs. Her dimensions are, length 247¾ ft., breadth 43 ft. 8 in., depth 26 ft.; tonnage, 2,201 gross, 1,664 register.

New Steamships for C.P.R. Ocean Service.

The C.P.R. has bought for £240,000 an ocean steamship of 9,400 tons carrying capacity, and with a speed of 13 knots an hour, at present under construction at Newcastle upon Tyne, Eng., for delivery in July or August. This will make the tonnage of the C.P.R. ocean fleet about the same as it was at the outbreak of the war. In order to provide for future requirements, and to secure advantage of the earliest construction that circumstances will permit, an arrangement has been made with John Brown & Co., Ltd., The Fairfield Shipbuilding & Engineering Co., Ltd., and Harland & Wolff, Ltd., for building, on a cost and percentage basis, two steamships, 605 ft. long between perpendiculars, with a speed of 20 knots an hour, and two steamships, 546 ft. long between perpendiculars, with a speed of 16 knots an hour.

The C.P.R. discontinued its service to the Gulf Islands, Mar. 31, and the s.s. Otter, which was utilized on that route has been docked at Victoria for overhaul and repairs. The mail contract which the C.P.R. held for the Gulf Islands route expired Feb. 1, and the company notified the authorities that it was the intention to withdraw the service. After some representations by local deputations, the company agreed to continue the service until Mar. 31, when it was finally withdrawn. The Government has made arrangements for the handling of mails, but early in April, no arrangement had been made for a passenger and freight service.

Shipbuilding in Canada for the British Government.

Canadian Railway and Marine World for April contained information in reference to arrangements made by Jas. P. Esplen, representing the British Shipping Controller, for the Imperial Munitions Board at Ottawa to secure all cargo steamships that may be available in Canada for delivery by May 31, 1918, and which are now completed, or under construction, or which it may be possible to build before that time. It was also stated that five vessels had been arranged for from British Columbia builders, that probably about the same number would be secured from builders in Nova Scotia, Quebec and Ontario, and that further orders would doubtless be placed. We are now in a position to state that the Imperial Munitions Board has arranged to have built for the British Government, at various plants between Montreal and Victoria, B.C., 26 steel steamships, ranging from 2,900 to 8,800 tons capacity, and with a total tonnage of 130,000. It is not probable that any more orders will be placed for steel steamships, at least for some time to come, on account of the impossibility of securing any further supply of steel plates for several months hence.

The Imperial Munitions Board will also place orders, as soon as possible, for as many wooden steamships, ranging from 3,000 to 3,500 tons capacity, as can be built in Canada. Standard designs and specifications for them have been under discussion between the Imperial Munitions Board, a representative of the British Shipping Controller, and shipbuilding companies, and are about completed. Most of these wooden steamships will necessarily be built on the Pacific coast, on account of its advantages in regard to the supply of the timber required, but some will probably also be built on the Atlantic coast. In connection with this, the Minister of Finance has arranged to advance $10,000,000 to the British Government, as a loan, which will be used in paying for the wooden steamships.

Is is stated that R. P. Butchart, of Victoria, will have charge of the business organization of the wooden shipbuilding for the Imperial Munitions Board.

The Imperial Munitions Board at Ottawa is closely co-operating with the United States Shipping Board in regard to the building of wooden steamships and it is said that standardized types of vessels have been agreed upon and that there will be a common schedule of prices and contracts.

As stated in Canadian Railway and Marine World for April, the Dominion Government, between Sept. 19 and Nov. 15, authorized the exportation to Norway, on completion, of 18 cargo steamships, to be built at New Glasgow, N.S., Montreal, Toronto, Port Arthur, Ont., and Vancouver, B.C., and for the exportation to the United States of two others to be built at Toronto. Arrangements are now being made to acquire nearly, if not all these, for the British Government.

The 100 steam wooden drifters, for which orders have been placed by the Naval Service Department, to be built at plants between Montreal and Port Arthur, as mentioned in our last issue, will be 84 ft. long, and will have engines of about 250 h.p.

A Port Arthur press dispatch of Aug. 20 says: "Jas. Whalen, President of the Port Arthur Shipbuilding Co., has returned from the east and announced contracts secured for work totalling more than $5,000,000. The capacity of the local plant is being doubled, and even at that work now in hand will keep it busy until well on into 1918.

Mainly About Marine People.

John Eadie has been appointed General Manager, Wallace Shipyards, Ltd., North Vancouver, B.C.

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L. A. W. Doherty
General Traffic Manager, Canada Steamship Lines Limited

P. 406

J. F. Pierce
Assistant Traffic Manager, Canada Steamship Lines Limited

George J. Plunkett, Vice President, Plunkett Navigation Co., Cobourg, Ont., died there, Mar. 29, aged 69.

Hon. J. D. Hazen, Minister of Marine, was the guest of Admiral Sir John and Lady Jellicoe, in London, Eng., towards the end of March.

H. S. Carmichael, Passenger and Freight Manager, Canadian Pacific Ocean Services Ltd., London, Eng., arrived in Canada, April 13, on a business trip.

W. G. Ross, Chairman, Montreal Harbor Commissioners, attended an executive committee meeting of the American Association of Port Authorities, in New York, April 4.

Capt. Robert Aikin, heretofore master of the G.T.R. and Wabash Ry. car ferry Detroit, has been appointed Superintendent of Ferries, G.T.R.-Wabash Ry., vice Capt. W. F. McGregor, who has retired on a pension. Office, Windsor, Ont.

L. A. W. Doherty, who has been appointed General Traffic Manager, Canada Steamship Lines, Ltd., Montreal, was born at Toronto, April 10, 1878, and entered transportation service in July, 1896, since when he has been, to 1887, clerk to Assistant Freight Traffic Manager, C.P.R., Toronto; 1897 to 1906, chief clerk to General Freight Agent, C.P.R., Toronto; 1907 to 1908, chief clerk to Assistant Freight Traffic Manager, C.P.R., Toronto; 1908 to 1910, Assistant Manager, Inland Navigation Co., Hamilton, Ont.; 1911 to Feb. 27, 1913, Traffic Manager, Inland Lines, Ltd., Hamilton, Ont.; Feb. 27, 1913 to Jan. 1914, Freight Traffic Manager, Richelieu and Ontario Navigation Co., Toronto; Jan. 1914 to Apr. 23, 1917, Freight Traffic Manager, Canada Steamship Lines Ltd., Toronto.

Denis Murphy, President, Ottawa Transportation Co., who died in Ottawa, Mar. 12, left an estate valued at $1,945,-233.69. His widow receives the Ottawa residence and an income of $20,000 a year for life. His son, Col. G. P. Murphy, and his daughter receive $400,000 each, and a similar amount is divided among the three daughters of his deceased daughter, Mrs. G. R. Warwick, Toronto. C. E. Russell, General Manager and Secretary-Treasurer, Ottawa Transportation Co., receives $1,000. There are a number of legacies to other relatives, friends and servants. Among his principal holdings were: Ottawa Traction Co., 3,120 shares, $249,600; Shawinigan Water and Power Co., 3,773 shares, $452,760; C.P.R., 1,013 shares, $156,002; Ottawa Transportation Co., 422 shares, $33,760; Ottawa Car Mfg. Co., 168 shares, $23,520.

John Franklin Pierce, who has been appointed Assistant Traffic Manager, Canada Steamship Lines, Ltd., Montreal, was born at Chatham, Ont., on Sept. 6, 1877, and entered transportation service, Oct. 14, 1896, since when he has been, to Oct. 1904, clerk, Richelieu and Ontario Navigation Co., Montreal; Oct. 1904 to Oct. 1910, chief clerk, same company, Montreal; 1910 to 1912, Travelling Passenger Agent, same company, Boston, Mass.; 1912 to 1913, District Passenger Agent, same company, Boston, Mass.; 1913 to Dec. 1, 1914, Assistant General Passenger Agent, and General Baggage Agent, Canada Steamship Lines, Ltd., Montreal; Dec. 1, 1914 to April 1916, General Passenger Agent and General Baggage Agent, same company, Montreal; April 1916 to April 23, 1917, Assistant Passenger Traffic Manager, same company, Montreal.

Leonard Fisheries Ltd. has been incorporated under the Dominion Companies Act, with $1,000,000 capital and office at Montreal, to carry on a general fishing and packing business, and in connection therewith to own and operate steam and other vessels, wharves, docks, etc.

Wooden Shipbuilding in Nova Scotia.

B. L. Tucker, lumber merchant, Parrsboro, N.S., is reported to have said in Montreal recently:—"There are now from 38 to 40 wooden ships on the stocks in Nova Scotia and we are well along to a big revival of the old busy, prosperous days. They are tern schooners of a carrying capacity of from 700 to 900 tons and are being turned out with the greatest dispatch. We have just launched a fine ship at Parrsboro and there is another on the stocks so recently vacated. There are five other vessels being built within a few miles of Parrsboro. The opposite shore of the Basin of Minas also is dotted with ship yards. Yards which four years ago were deserted and looked as if they would remain to be pointed out to the tourist as mementos of a past activity, have been born again at Meteghan, Weymouth and other parts along the Bay of Fundy. And the same is true of the Atlantic coast, Liverpool, Mahone and so on.

"While the builders are making big profits and have orders for all the ships they can build, the owners of these wooden ships have found them regular gold mines. Freight rates went sky rocketing and in two to three trips across to the United Kingdom the ships paid for themselves. On account of the submarine menace a number of the schooners have been held in Great Britain by the Admiralty—but that is one of the fortunes of these stirring times.

"Coupled with the rebirth of the old ship yards, has been the rejuvenation of the masters of wooden ships. All over the province were to be found aged sea captains who could spin wonderful sea yarns of the days when Nova Scotian ships were as familiar a sight in Rio, Shanghai, the Canaries, and Antwerp as they were in Halifax. Now the good old days have returned. With the building of schooners has come the demand for captains. Skilled sea captains cannot be developed in a day and many an old sea dog who had sighed over the passing of the 'good old days' has found himself again on the prancing deck of a saucy 'Sally Sue.' Nova Scotia is coming into her own again."

Standarized Ships for Great Britain.

Sir Leo Chiozza Money, Parliamentary Secretary to the British Shipping Controller, is credited with the statement that all ships now under construction in the United Kingdom or abroad are for the particular interests of the nation. He is also reported to have said: "The programme of shipbuilding construction laid down by the Government is a very big thing. It will be carried out as well by the estimative scheme as by standardization. What we want at present is what we commonly call tramp steamships, but something more than the ordinary vessel of that class. The question of speed is very important. It must be laid down that the new vessels must exceed in swiftness the underwater speed of the submarine. This is because underneath the surface the submarine cannot use her guns. There is a good deal to be said on this ground alone in favor of the policy of building the new type of standard ship."

On the same subject a correspondent of the British press writes: "From conversations I have had with leading shipbuilders I find that they are not altogether satisfied with the public idea about the standard cargo ships which are being built as the swiftest way of meeting the dearth of shipping caused by the German submarine. I find that there is a very strong feeling among shipbuilders that, before constructing the new standard type, material should be provided for the completion of ships already in the stocks. The fact is that there are a number of ships in various stages still awaiting their steel plates. Some of these ships are standing as they were at the beginning of the war. Regarding the standard ships which are being laid down, not only in the yards accustomed to cargo boat construction, but in all the big yards, there are two varieties, but there is not much difference in type. The speed will be somewhat faster than the present carriers of that size. They will be the property of the state under the management of the Shipping Controller. They are being paid for on a new system, with a definite sum for on-cost charges and profit, to which will be added the cost of labor and material. The design was arranged by a conference of shipbuilders with the Controller, and one shipbuilder on the Clyde and one on the Tyne each drew the standard design for these localities."

U.S. Water Supply Regulations on Great Lakes Vessels.—The text of the regulation affecting water supply on vessels trading in interstate commerce on the Great Lakes was given in full in our last issue, and comment was made to the effect that the regulation was not thought to include Canadian vessels, as they are precluded from engaging in interstate traffic in the U.S. It has, however, been learned that the U.S. Health Department has indicated definitely that the new regulation will apply to Canadian vessels entering U.S. ports, as well as to U.S. vessels. The Dominion Marine Department has taken the matter up, and after having had a number of vessels examined, has come to the conclusion that it would be impossible to make the required alterations in time for the opening of navigation. Negotiations are pending with the U.S. Government, with a view to arranging for a suspension of the regulation as regards Canadian vessels, until arrangements can be made for the required alterations to be made at reasonable expense.

The Ocean and Inland Transportation Co., Ltd., Montreal, the incorporation of which was announced in our last issue, has been organized. The President of the company is C. I. deSola, Montreal, who has for many years represented Swan, Hunter and Wigham Richardson, Ltd., shipbuilders, of Newcastle, Eng., and is also Consul for Belgium. The company will undertake chiefly the chartering and buying and selling of steamships ,and other work connected with the management and insurance of vessels.

CANADIAN PACIFIC RAILWAY CO.

Notice to Shareholders.

The date of the Annual General Meeting of the Shareholders of the Company having been changed by Bylaw from the first Wednesday in October to the first Wednesday in May in order to conform to the practice now generally adopted in the United States under regulations of the Interstate Commerce Commission of making the fiscal year of railway companies correspond with the calendar year and which it is expected will be made applicable to Canadian railways by amendment to the Railway Act of Canada, the THIRTY-SIXTH ANNUAL GENERAL MEETING of the Shareholders for the election of Directors to take the places of retiring Directors and for the transaction of business generally, will be held on the second day of May next at the principal office of the Company at Montreal at twelve o'clock noon. A statement of the Company's financial position and the results of its operations during the half-year ended December 31st, 1916, will be submitted for the approval of the Shareholders.

Special Meeting.

The Meeting will be made Special for the purpose of considering and, if advisable, of authorizing the issue, upon the necessary statutory authority being obtained, of Collateral Trust Bonds of the Company for the purpose of acquiring securities of the Company and of Companies whose lines are leased to or operated under working arrangements with the Company, which are proposed to be compulsorily purchased by the Government of the United Kingdom of Great Britain and Ireland under regulations issued pursuant to the provisions of the Defence of the Realm (Consolidation) Act, 1914, and amending enactments, and if such issue is authorized, to sanction and approve the Agreement between the Government and the Company and to authorize and approve a form of Trust Deed to be given to secure the payment of such Collateral Trust Bonds, the whole as more particularly set out in a circular to be issued to the Shareholders prior to the date of the Meeting.

The Common Stock Transfer Books will be closed in Montreal, New York, and London at 3 p.m. on Tuesday, the tenth day of April. The Preference Stock Books will be closed in London at the same time.

All books will be re-opened on Thursday, the third day of May.

By order of the Board,

ERNEST ALEXANDER, Secretary.

Montreal, 29th March, 1917.

Are You in the Market for Trolley Catchers, Retrievers, Bases or Head Lights

We manufacture Knutson No. 5 Trolley Retriever, Knutson No. 2 Trolley Retriever, The Ideal Trolley Catcher, The Simplex Trolley Base, The Peerless No. 10 Roller-bearing Trolley Base, The Peerless Check Valve, The Peerless Junior Head Light, The Perfect Head Light, The Hollis Safety Fender, No. 3 Detachable Fender.

Trolley Supply Co.
CANTON, OHIO

Among the Express Companies.

A lecture on the safe transportation of acids, inflammables, oxidizing substances, etc., by express, was delivered in the Y.M.C.A. hall, Montreal, Mar. 31, by A. H. McMullen, Inspector of the Bureau of Explosives. A large number of local employes of the express companies, as well as a number of agents, attended and gave close attention to the explanation of the requirements of the various regulations. The lecture was illustrated by lantern slides showing the danger to life and property if the regulations are not fully complied with. A vote of thanks was moved and seconded by John Pullen, President, Canadian Ex. Co., and V. G. R. Vickers, Manager, Foreign Department, and Superintendent, Atlantic Division, Dominion Ex. Co., respectively.

Telegraph, Telephone and Cable Matters.

J. McMillan, Manager of Telegraphs, C.P.R., entertained the telegraph officials of the C.P.R., Quebec Division, to dinner at Montreal, April 17.

The Great North Western Telegraph Co. has opened offices at Bristol, Dunham, Little Metis lighthouse, Montreal East, Que.; Aultsville, Kingsville, Ont.; and has closed its offices at St. Antoine de Tilly, Que.; Paynes, Ont., and Port Kells, B.C. The name of the office at St. Luce, Que., has been changed to Luceville.

The Great North Western Telegraph Co. and the C.P.R. Telegraphs are applying to the Board of Railway Commissioners for authority to amend the conditions of their telegraph forms by providing that the company forwarding a telegram to reach its destination shall not be liable for damages toward either the sender or addressee, arising from failure to transmit or deliver, or from any delay or error in the transmission or delivery of any unrepeated telegram, whether happening from negligence of its servants or otherwise, or from delays from interruptions in the working of its lines, for errors in cipher or obscure messages, or from errors from illegible writing, beyond the amount received for sending same.

The Canadian Government Railways have purchased certain telegraph lines between St. John, N.B., Halifax and Sydney, N.S., from the Western Union Telegraph Co., and certain lines between Moncton, N.B., and Montreal, from the Great North Western Telegraph Co. These lines, as taken over by the Government, are for operation for railway business only, and it will not operate a commercial service, this being given by the Western Union and G.N.W. companies, as hitherto. The Government will erect some additional lines in the territory named, which will be used for railway purposes. The G.N.W.T. Co. will also erect some additional wires in the Maritime Provinces, commencing in May, and all the lines operated in these provinces by the W.U.T. Co. will be taken over by the G.N.W.T. Co., except those used for cable lines landing at Sydney, N.S. The Government does not contemplate making any change in the operation of telegraphs over the Transcontinental Division of the Canadian Government Railways. A. C. Barker is acting Superintendent, Telegraph and Time Service, C.G.R.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Taylor & Arnold, Limited, railway, marine and aeroplane supplies, Montreal, have appointed A. McTavish, heretofore engineer inspector, Grand Trunk Pacific Ry., as travelling engineer for territory west of Fort William.

The Star Brass Works, Kalamazoo, Mich., are putting out their Kalamazoo trolley harps with new improved contact springs. They say that the springs are not riveted to the harp, and that renewals can be made quickly and easily without removing the pole from the car. The contact surfaces are large, thus giving greater current capacity and adding to the life of the pins and bushings. The same heavy lug washers are used, which serves to keep the springs in place when changing wheels, besides preventing wear on them. It is also stated that one pair of springs have been in service continually for over a year and are in perfect condition.

Hunt-Spiller Manufacturing Corporation.—J. G. Platt, Sales Manager, who has been elected a Vice President, had many years experience in railway service in various capacities with the Baltimore & Ohio and the Erie Railroads, leaving the position of Engineer of Tests of the Erie to enter mercantile life. On June 1, 1907, he was appointed Mechanical Representative, Hunt-Spiller Mfg. Corporation, was promoted to Sales Manager June 1, 1912, and will continue in that position in addition to that of Vice President. F. M. Weymouth, who has been elected a Vice President, was in Feb., 1913, appointed Assistant to the President, and will continue in that capacity in addition to that of Vice President.

The Vapor Car Heating Co., Inc., has taken over all the heating and ventilating business of the Chicago Car Heating Co. and the Standard Heat & Ventilation Co., Inc. The main office and headquarters of the business will be in the Railway Exchange, Chicago. The officers are as follows: Egbert H. Gold, President; J. F. Buker, Vice President; J. Allan Smith, Vice President; Samuel Higgins, Vice President and Treasurer; Winthrop Gold, Asst. Treasurer; A. Schreiber, Gen. Manager; A. P. Harper, Secretary and Comptroller; O. R. Barnett, General Counsel. Branch offices will be maintained as follows: Montreal, in charge of F. A. Purdy and S. P. Harrison; New York, N.Y., in charge of S. Higgins and Geo. T. Cooke; Boston, in charge of F. F. Coggin; Washington, D.C., in charge of H. F. Lowman; Atlanta, Ga., in charge of Lewis B. Rhodes.

The Schooner Romaine, Ltd., has been incorporated under the Dominion Companies Act, with $5,000 capital and office at Montreal, to carry on the business of shipowner and common carrier by sea. The schooner Romaine is on the Canadian register as owned by C. A. Cantin, Montreal. She was built at Gaspe, Que. in 1881 and then named Dolphin. Her dimensions are, length 64.5 ft., breadth 20.6 ft., depth 9.3 ft., tonnage 65 register.

Transportation Conventions in 1917.

May.—Association of Railway Claim Agents, Louisville, Ky.
May 1-4.—Air Brake Association, Memphis, Tenn.
May 9-11.—Railway Development Association, Louisville, Ky.
May 14-17.—International Railway Fuel Association, Chicago, Ill.
May 15-16.—International Association of Ticket Agents, Banff, Alta.
May 16.—American Railway Association, New York.
May 22-25.—Master Boiler Makers' Association, Richmond, Va.
May 30.—Association of American Railway Accounting Officers, Richmond, Va.
June.—American Association of Freight Agents, Denver, Col.
June 13-16.—American Railway Master Mechanics' Association, Atlantic City, N.J.
June 18-21.—Master Car Biulders' Association, Atlantic City, N.J.
June 19.—Freight Claims Association, Banff, Alta.
August.—International Railroad Master Blacksmith's Association, Chicago, Ill.
Aug. 8-10.—American Association of Railroad Superintendents, Minneapolis, Minn.
September.—Railway Signal Association, Atlantic City, N.J.
Sept. 11.—Master Car and Locomotive Painters Association of the United States and Canada, Chicago, Ill.
Oct. 16-20.—National Association of Railway Commissioners, Washington, D.C.
Sept. 18-20.—Association of Railway Telegraph Superintendents, Washington, D.C.
Sept. 18-21.—Roadmasters and Maintenance of Way Association, Chicago, Ill.
October.—American Association of Dining Car Superintendents, San Francisco, Cal.
October.—Railway Real Estate Association, Duluth, Minn.
Oct. 16-18.—American Railway Bridge and Building Association, St. Paul, Minn.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:
Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.
Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.
Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.
Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.
Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.
Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Sessions-Standard Friction Draft Gear
Simplest and Best

Both Made by
Standard Coupler Co.
30 CHURCH STREET, NEW YORK

Standard Steel Platforms
Used by all Canadian Railways

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.
Express Traffic Association of Canada—C. N. Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.
Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.
Niagara Frontier Summer Rate Committee—James Morrison, Montreal.
Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.
Quebec Transportation Club—A. F. Dion, Quebec.
Shipping Federation of Canada—Thos. Rohh, Manager, 42 St. Sacrament Street, Montreal.
Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.
Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.
Transportation Club of Vancouver—H. W. Schofield, 553 Granville Street, Vancouver, B.C.
Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.
Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

Car Closets
Flush or Dry
DUNER CO. 101 S. CLINTON ST. CHICAGO

Showing the construction of our geared jacks.

Celebrated "H & E" Lifting Jack
Our Patent Ball-Bearing Geared Jacks are Ideal in Railroad and Heavy Construction Work.
These Jacks are built for heavy service in bridge, roundhouse and wrecking work, are made with great care from the very best material and will be found the most satisfactory jacks for the purpose on the market.

High Grade Electric
STEEL CASTINGS
MANGANESE STEEL
For Crusher Jaws and Heavy Wear Parts

BRONZE
M.C.B. Standard Journal Bearings and Engine Bearings

Improved Reinforced Steel-Backed
BRAKESHOES
Locomotive Driver and Truck Shoes. Freight and Passenger Car and Electric Car Shoes.

Canadian Brakeshoe Company, Limited
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Sole Agents for Brakeshoes for Canada outside of B.C., Messrs. Taylor & Arnold, Limited, Montreal and Winnipeg. Sole Agents for B.C., The B.C. Equipment Co., Vancouver, B.C. Sole Agent for Lifting Jacks for Canada, F. H. Hopkins & Co., Montreal.

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LOCOMOTIVE, TENDER AND PASSENGER CAR SPRINGS of every description.
EQUALIZING, DRAWBAR, BUFFER AND SPIRAL SPRINGS of all kinds.
STREET RAILWAY SPRINGS, from the largest to the smallest.
TRACK TOOLS, RAIL BRACES, TIE PLATES, GUY ANCHORS AND RODS, LOCOMOTIVE SANDERS, CHAIN, Etc.
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Locomotive Turntables Roofs Steel Buildings
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BRIDGES
Structural Iron Work of all Descriptions

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Engineers, Manufacturers and Erectors of Steel Structures.
CAPACITY 135,000 TONS.

Railway and Highway Bridges, Swing and Bascule Spans, Buildings of all kinds, Hemispherical Bottom and other Tanks, Transmission Poles and Towers, Riveted Pipe, Caissons, Barges, Turntables, Electric and Hand Power Cranes, Hoisting Appliances, Lift Locks, Hydraulic Regulating Gates, etc. Gear Cutting and General Machine Work.

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Branches throughout the Dominion of Canada.

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Locomotive Castings

SAVES MONEY

INCREASES: Engine Efficiency—Engine Mileage.
DECREASES: Engine Failures—Engine Repairs.

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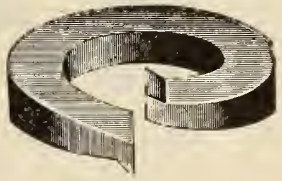
The Positive Lock Washer

is the BEST Nut LOCK for all purposes



We also make plain coils and tail nut locks

The Positive Lock Washer Co.
Sole Mfrs., Newark, N.J.

F. H. HOPKINS & CO., Agents, Montreal

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of all descriptions to stock or special design, apply to

The Canadian Office and School Furniture Co., Limited
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It Pays to carry an advertisement in the Canadian Railway and Marine World every issue of the year because you obtain proportionately better **Results**

Speed and Permanency in Culvert Construction

IF time is a consideration in road making or road repair, you want a culvert that will give you permanency, endurance and facilitate the work of laying.

PEDLAR'S "PERFECT" TONCAN METAL CULVERTS

afford you both in greatest measure. You simply make your ditch, roll the Culvert into position and fill in. Less time, less labor, less trouble. And once laid, Pedlar's Culverts will keep on giving good service for years. They have withstood by actual test, a strain 29 times greater than would render iron piping useless. Their deep, lateral corrugations afford the necessary amount of resiliency without sacrificing endurance and permanency.

Pedlar's Culverts are made of heavily galvanized, anti-corrosive TONCAN METAL which cannot rust, rot, pit, corrode or crack from frost. Supplied in all sizes from 8 in. to 84 in. in diameter, and in lengths up to 40 feet.

Ask us to send you the complete Culvert Reference Book No. 4 R.M., containing valuable drainage tables and full of details as to culvert construction.

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Executive Office and Factories, OSHAWA, ONT.
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THE CATTLE-PROOF CHEMICAL WEED KILLER

There is a psychological time to kill weeds with chemicals. Kill the germinating seeds and you will not have any weeds. Get the little weed before you have a heavy, thick growth and are compelled to waste a large part of the solution on foliage. Labor is scarce and high, the railways of the country will, in all probability be taxed to their capacity; therefore there is no time for inefficient, repeated hand weeding this year.

One barrel, approximately 55 gallons weighing 640 lbs, diluted with 20 parts water, kills the weeds on a mile of track 8 feet wide. It is easily and economically applied, no expert knowledge nor elaborate sprinkling devices being required.

Start early, get your **TRACKOLINE** and your equipment on the job, and be ready to make a one-time efficient solution of this weed proposition.

BEFORE TREATMENT

Send for testimonial letters from prominent railroad officials, and booklet.

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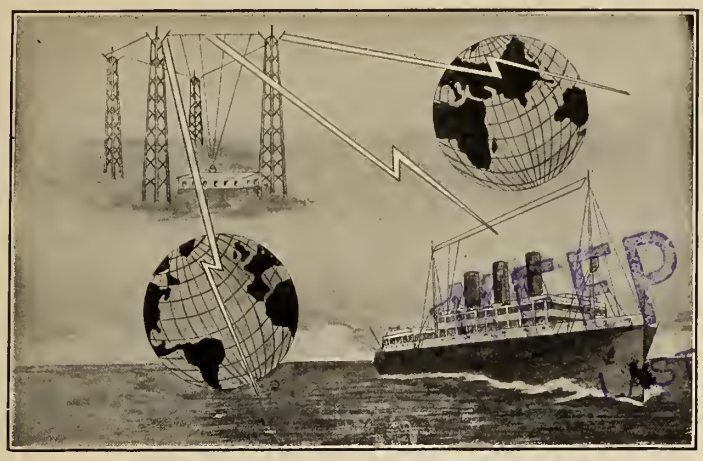

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Price List C

Length Handle	Set No.	Pipe Handled	Set Complete	Extra Handle	Extra Girths	
10 in.	1	⅜, ½, ¾, 1 in.	$5.00	$2.25	⅜, ½, ¾, 1 in.	$ .75
20 in.	2½	¾, 1, 1¼, 1½, 2 in.	7.50	2.50	¾, 1, 1¼ in.	1.00
					1½, 2 in.	1.25
25 in.	3½	1½, 2, 2½, 3 in.	7.50	3.00	1½, 2, 2½, 3 in.	1.25

Prices on larger sizes furnished upon application.

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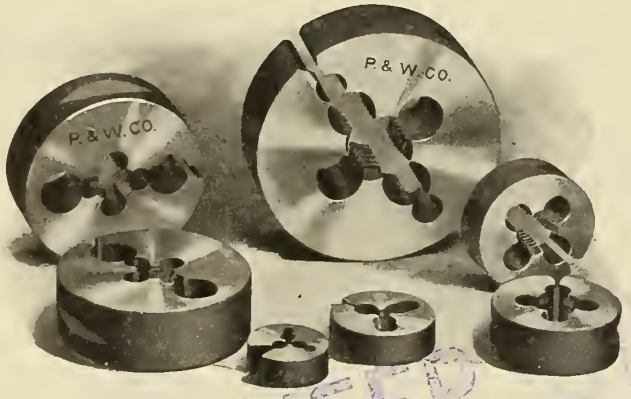

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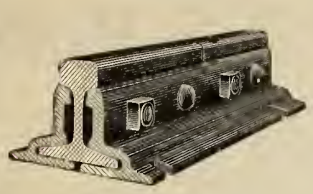
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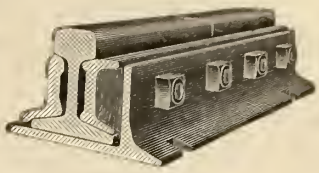
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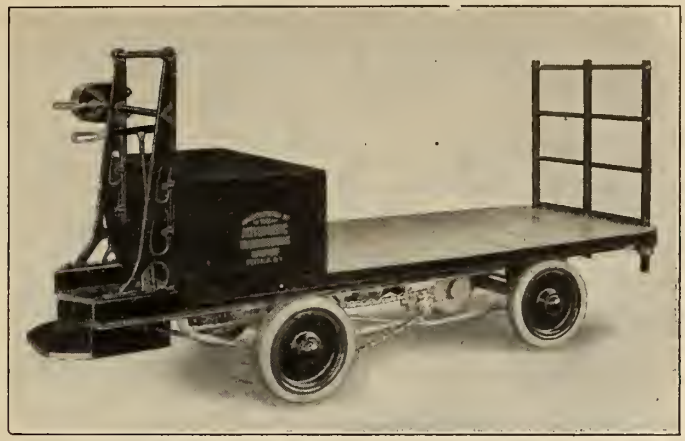

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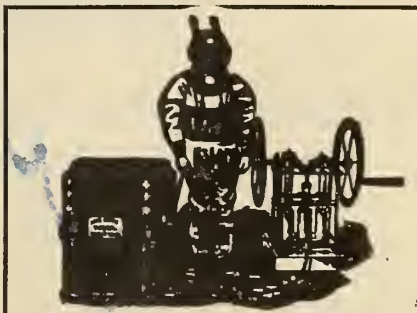

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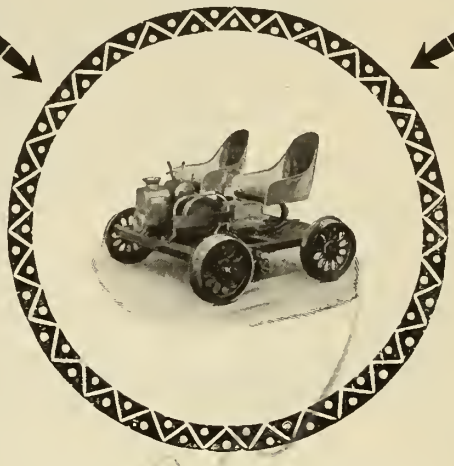

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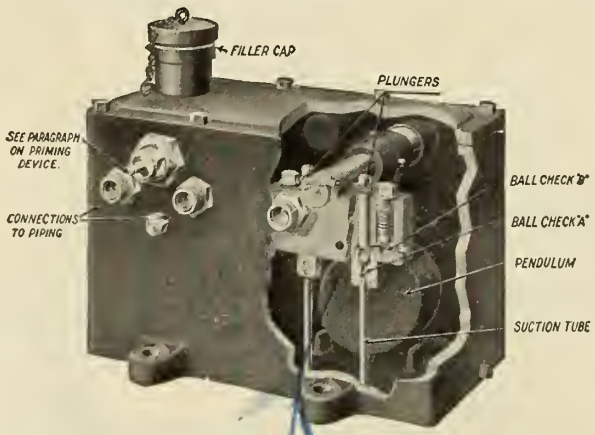

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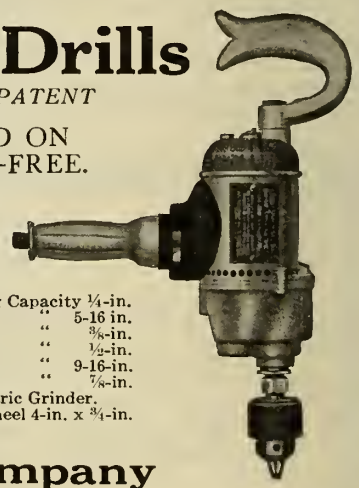

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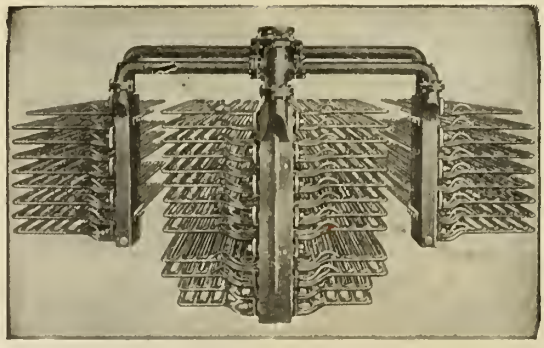

5. It results in a saving of fuel over saturated plants, both operating under the same draft conditions, of 10% to 20%.
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7. It does not prevent rapid, thorough, and frequent cleaning of the tubes.
8. Its construction provides easy access to all screwed joints and the easy removal of the parts.

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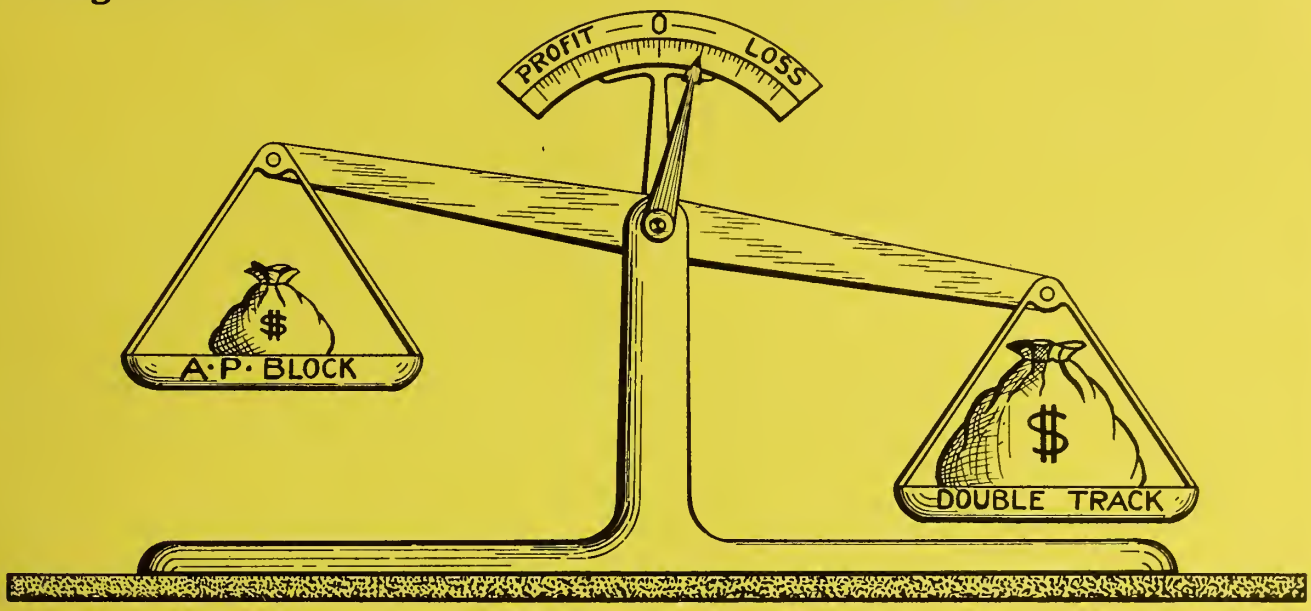
30 Church Street, New York, N.Y. Peoples Gas Bldg., Chicago, Ill.

Absolute Permissive Block Signaling Your Single-Track Lines

—OR—

Double Tracking Your Single-Track Lines—WHICH?



Weigh this Matter Carefully

and take these points into consideration. ABSOLUTE PERMISSIVE BLOCK SIGNALING will increase the capacity of your single-track line to an extent approaching the result obtained from double tracking.

It will do this at one-tenth the cost of an additional track, assuming that your present buildings, fuel and water stations, right-of-way etc. are sufficient for that purpose.

The difference in the annual maintenance costs of an A-P-B System and an additional track will pay interest and depreciation on an A-P-B investment.

ABSOLUTE PERMISSIVE BLOCK SIGNALING not only increases the capacity of your single-track lines, but it protects your traffic against costly delays and accidents due to broken or removed rails, open switches or draw-spans, or cars on sidings fouling the main line.

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Then decide which is the better investment

For more complete information ask for Bulletin 128A.

"Safety First"

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GENERAL RAILWAY SIGNAL COMPANY

OF CANADA LIMITED

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Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 232 | TORONTO, CANADA, JUNE, 1917 | Subscription Rates, Page 233

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Bertram Machine Tools are built for safety and service. Half a century of machine tool building stands behind them..

Our up-to-date engineering organization will gladly give honest advice as to what machine tool is best suited for your needs.

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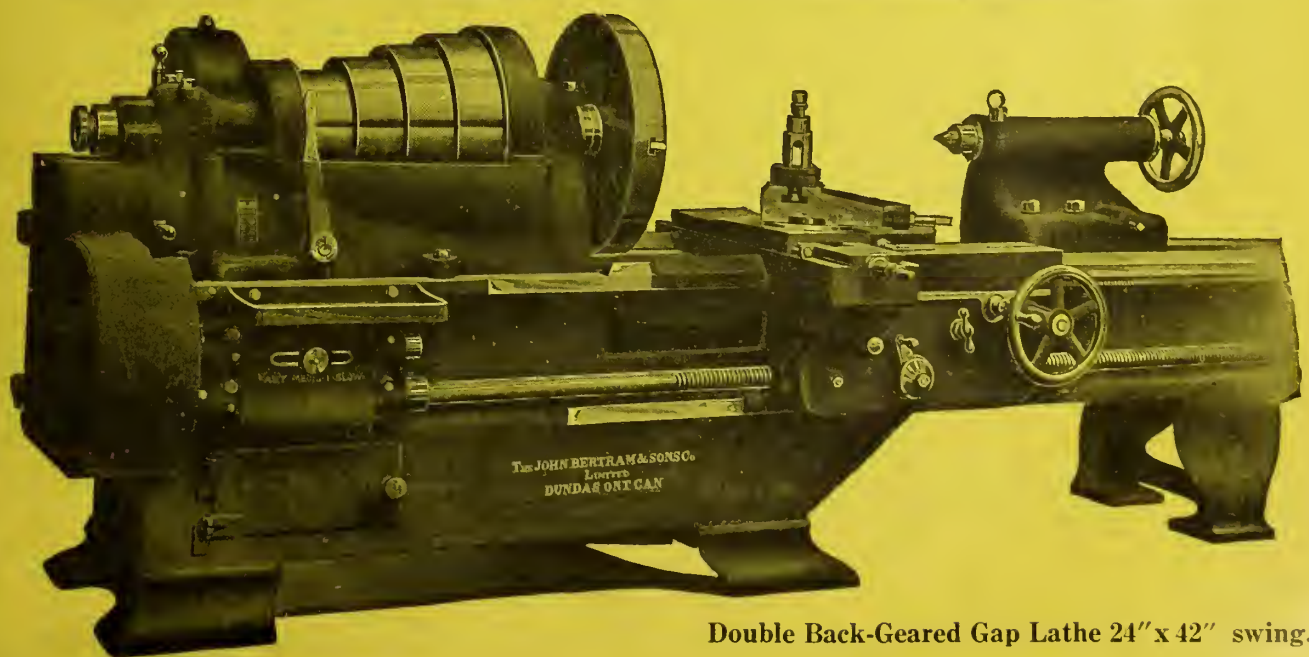

Double Back-Geared Gap Lathe 24″ x 42″ swing.

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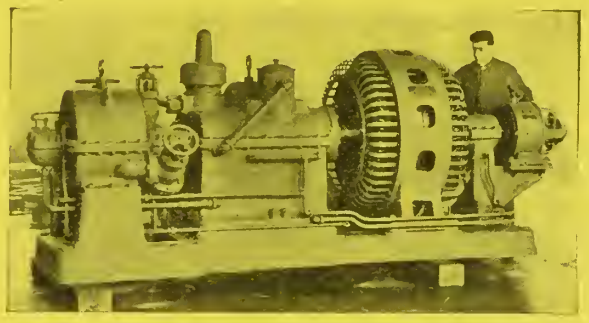
Westinghouse

Geared Turbo-Generators

There is one big feature especially adapting Westinghouse Geared Turbo Generators to lighting service—



150 KW Westinghouse Turbo-Generator Unit.

Good Fractional-Load Economies

Take for instance the 150 KW unit shown here. If desired, it may be operated continuously, as a 75 KW Generator. Over this entire range the economy remains practically constant.

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Our pamphlet No. 2144 will be of interest.

All Thermit and Thermit appliances are made in our Canadian shops.

GOLDSCHMIDT THERMIT COMPANY

103 Richmond St., W., Toronto, Ont.

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The Buyer's Interest in Wasteless Advertising

BUYERS who appreciate that waste in selling must eventually be passed on to them in some form, are paying more and more attention to the sales methods of the concerns seeking their business.

> The extravagant use of space in publications of general circulation, to advertise a commodity or a service appealing chiefly to a certain well-defined class, is not only poor judgment, but *it is an economic waste.*

Can you imagine an intelligent salesman, with a proposition for a steel mill or a dry goods store, calling at every office in town in an effort to locate a prospect? How needlessly wasteful to adopt similar methods in advertising, which is simply an improved means of accomplishing certain necessary steps of a sale.

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> Properly used, the good business paper bears the same relation to the sales department, that an improved machine does to the production department. Better selling methods go hand in hand with better manufacturing methods.

To encourage wasteless advertising, the most efficient modern means of bringing buyer and seller together, there is every reason why the discriminating buyer should give preferred consideration to the concern that tells its business story in the buyer's own business paper.

Ask this office anything you want to know about Business Papers or Business Paper Advertising.

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The International Organization of Trade, Technical and Class Publications

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American Paint & Oil Dealer
American Printer
American Blacksmith
American School Board Journal
Architectural Record
Automobile, The
Automobile Dealer & Repairer
Aviation and Aeronautical Engineering
Boot & Shoe Recorder
Brick & Clay Record
Buildings & Building Management
Bulletin of Pharmacy
Canadian Grocer
Canadian Railway & Marine World
Cement World
Clothier & Furnisher
Coal Age
Concrete
Domestic Engineering
Drygoodsman, The
Dry Goods Economist
Dry Goods Reporter
Editor & Publisher
Electrical Review & Western Electrician
Electrical World
Electric Railway Journal
Electric Traction
Engineering & Mining Journal
Engineering News-Record
Farm Machinery—Farm Power
Furniture Manufacturer & Artisan
Grand Rapids Furniture Record
Haberdasher, The
Hardware Age
Hide & Leather
Hotel Monthly
Illustrated Milliner
Implement Age
Industrial Arts Magazine
Inland Printer
Iron Age
International Trade
Lumber Trade Journal
Lumber World Review
Manufacturing Jeweler
Marine Engineering
Metal Worker, Plumber & Steam Fitter
Metallurgical & Chemical Engineering
Modern Hospital
Motor Age
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National Builder
National Druggist
National Petroleum News
Power
Practical Engineer
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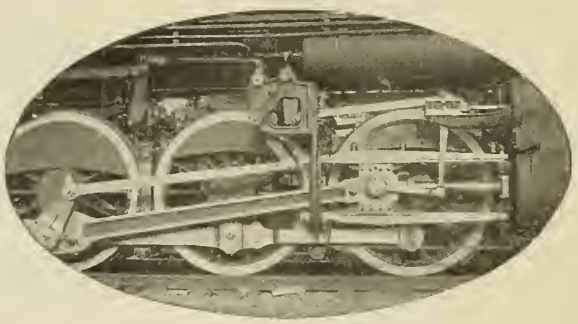
Railway Electrical Engineer
Railway Maintenance Engineer
Railway Mechanical Engineer
Railway Signal Engineer
Shoe & Leather Reporter
Shoe Findings
Shoe Retailer
Tea & Coffee Trade Journal
Textile World Journal
Transfer & Storage
Woodworker

The Chain of Evidence is all in Favor of the Baker Valve Gear



The Weakest Link

The Baker Gear Has No Link

Modern Power Demands A Modern Valve Gear

The Baker Valve Gear is **the** modern valve gear. On account of the absence of the link, it eliminates the multitude of troubles due to its use—Service records prove this to be a fact, and we absolutely guarantee it.

Write for a copy of the guarantee.

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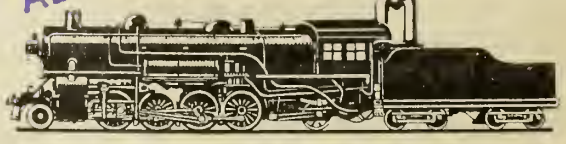


The Pilliod Company, New York, N.Y.

Canadian Representative

Canuck Supply Co., Limited

Montreal Toronto Winnipeg Vancouver

Faraday Push Button

ONE PUSH

and

Faraday High Voltage Car Signals

Unfailingly Signal STOP

Faraday Resistance

Faraday car signal systems are for operation direct from the trolley circuit of from 500 to 600 volts. Their use eliminates entirely the cost and annoyance which almost invariably result from the use of battery systems.

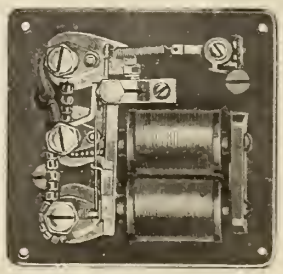
Faraday Resistance Panels contain resistance units in cartridge form so that the replacement of a resistance unit is an easy matter. These resistance units are absolutely permanent and are mounted on slate bases.

Faraday Push Buttons are designed especially for use on high voltage circuits. They are constructed particularly for car installation, are tamper-proof and when properly installed are absolutely unfailing in operation.

Faraday Bells and Buzzers are likewise unfailing in operation because they are properly insulated and protected from injury by cast iron covers which also make them absolutely waterproof. And because all Faraday bells and buzzers have platinum contacts and micrometer lock adjustments which cannot possibly change due to car vibration.

When you buy Faraday Car Signals you get the best equipment to be had and their use will mean that you can forget about car signal maintenance and its cost.

Write for complete data.



Faraday Buzzer

Electric Service Supplies Co.

PHILADELPHIA NEW YORK CHICAGO
17th and Cambria Sts. 50 Church St. Monadnock Bldg.

Lyman Tube & Supply Co., Ltd.

MONTREAL **TORONTO**
323 St. James St. **33 Melinda St.**

KILL
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"You Have the Cleanest Road in America"

is the compliment recently given to the Buffalo, Rochester & Pittsburgh Railway Company. This is largely due to the thorough methods of collecting scrap, and this is greatly facilitated by the efficient handling systems at the scrap yards. Brownhoist Cranes do this work of unloading, sorting and reloading. Equipped with lifting magnet, this crane handles iron and steel scrap at a cost 80 per cent. less than what it would cost to do this work by hand.

Brownhoist Cranes are used because 25 years' records have proven that they can be depended upon working day and night if necessary. They may cost more, but soon pay for the difference.

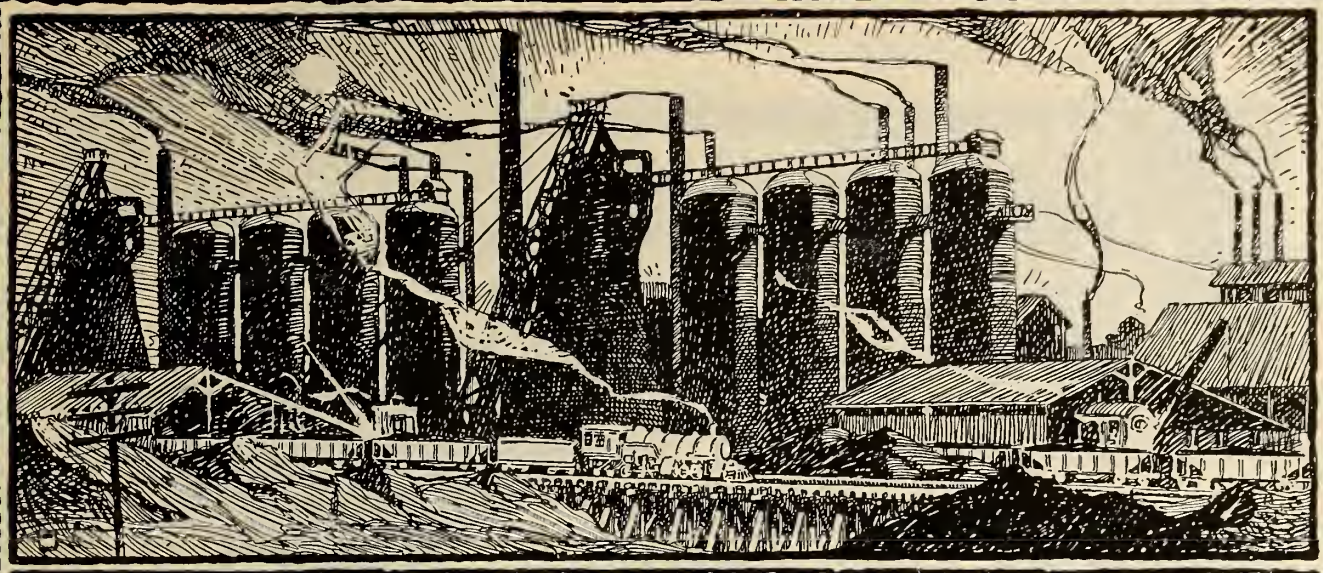
The Brownhoist Crane is fully illustrated and described in Catalog I, which will be sent upon request.

The Brown Hoisting Machinery Co.

CLEVELAND, OHIO

Engineers and manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller cranes and hoists.

Branch offices in New York, Pittsburgh, Chicago, San Francisco and (Portland, Ore., Colby Engi. Co.)



LITTLE WORDS WITH BIG MEANING

Quality

According to "Webster," Quality is "an excellence of character; natural superiority."

Service

Webster's definition of "Service" is: "The performance of labor for the benefit of another."

We use these words advisedly—fully understanding their definitions—and realizing the obligation we place upon ourselves by their continued use in connection with our products of Iron and Steel, and our attitude to the people we serve.

KILL LAST

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OF

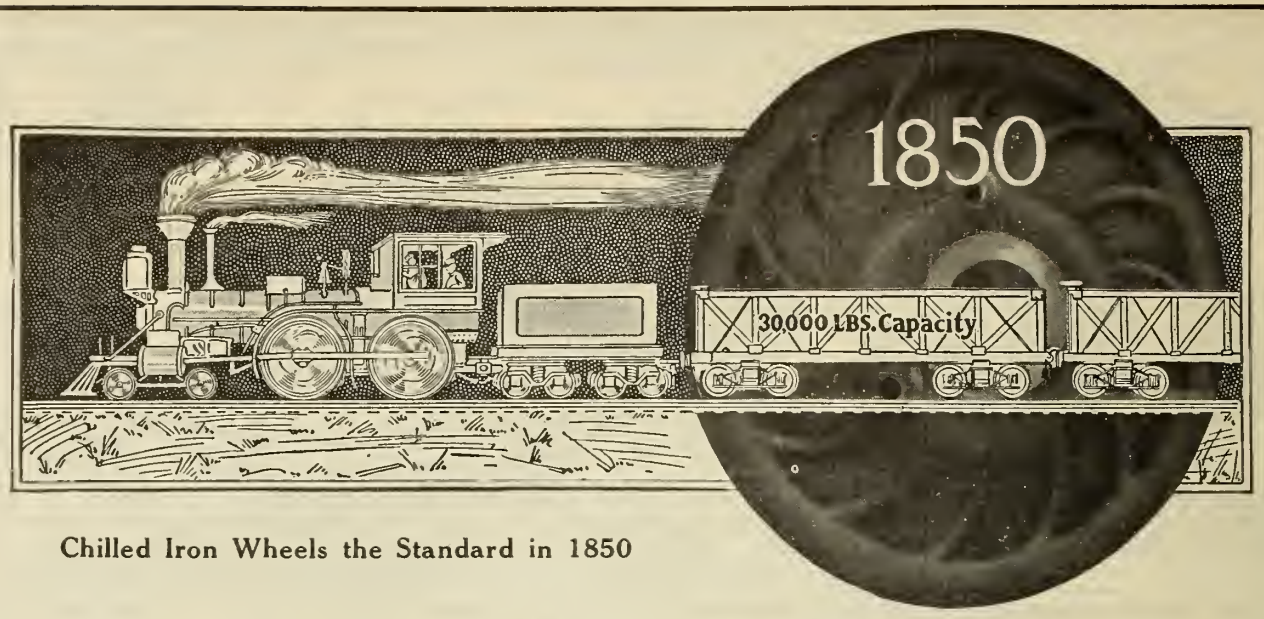
CANADA

LIMITED

MONTREAL HAMILTON

Pig Iron,
Steel & Iron Bars,
Horse Shoes,
Steel and Iron Products.

Steel Billets,
Track Spikes &
Bolts, Forgings, Wire
of every description.



Chilled Iron Wheels the Standard in 1850

The Wonderful Single Service Chilled Iron Wheel

Considered from a chemical, physical and metallurgical standpoint, the Chilled Iron Wheel possesses certain inherent properties which are not found in other metals.

The higher combined carbon in the tread or running surface of the wheel produces the hardness which is so necessary for a maximum wear and the chilled treads will not crush or flow under the heaviest traffic pressure.

The plates are soft with an open fracture which enables the wheel to resist temperature stresses due to brake application.

The hubs are soft which insures a strong and perfect axle fit.

These conditions are ideal for service and there is no other metal that possesses this graded hardness of structure.

The single service, one-wear chilled iron wheel, because of its hardness, will give a greater mileage per unit of metal worn away than any other type of wheel.

25,000,000 now running.

Association of Manufacturers of Chilled Car Wheels

1228 McCormick Building, Chicago

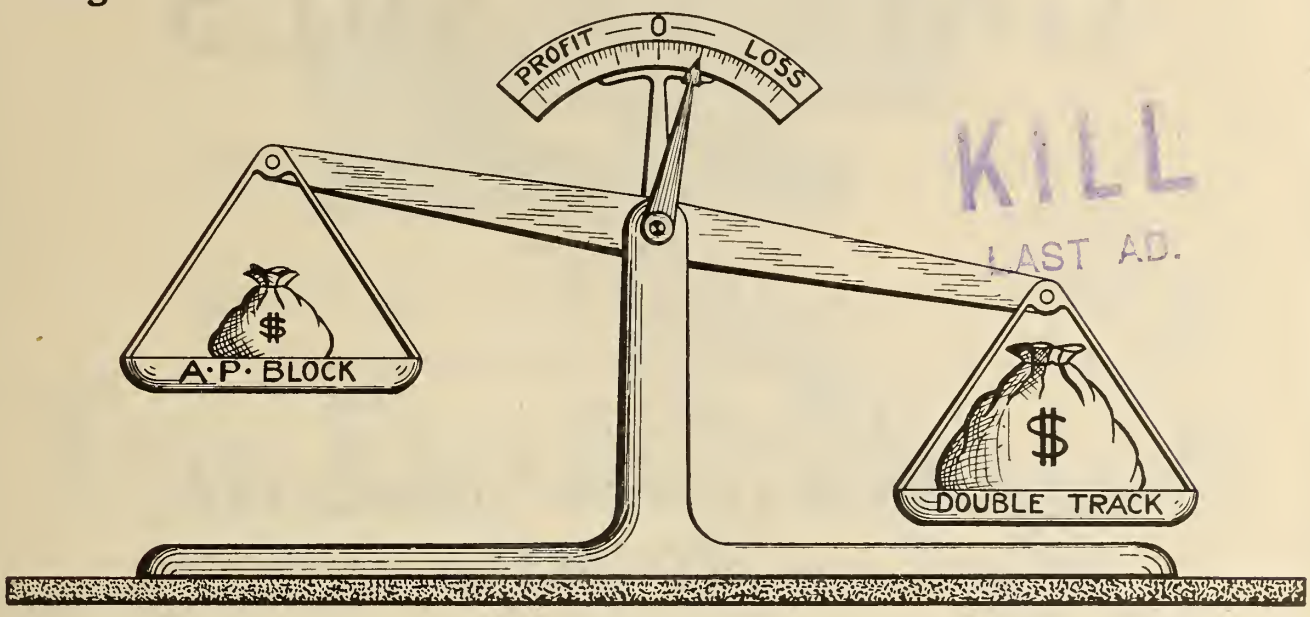
Representing Forty-eight Wheel Foundries Throughout the United States and Canada. Capacity 20,000 Chilled Iron Wheels Per Day

Chilled Iron Wheels the Standard today

Absolute Permissive Block Signaling Your Single-Track Lines

—OR—

Double Tracking Your Single-Track Lines— WHICH?



KILL
LAST AD.

Weigh this Matter Carefully

and take these points into consideration. ABSOLUTE PERMISSIVE BLOCK SIGNALING will increase the capacity of your single-track line to an extent approaching the result obtained from double tracking.

It will do this at one-tenth the cost of an additional track, assuming that your present buildings, fuel and water stations, right-of-way etc. are sufficient for that purpose.

The difference in the annual maintenance costs of an A-P-B System and an additional track will pay interest and depreciation on an A-P-B investment.

ABSOLUTE PERMISSIVE BLOCK SIGNALING not only increases the capacity of your single-track lines, but it protects your traffic against costly delays and accidents due to broken or removed rails, open switches or draw-spans, or cars on sidings fouling the main line.

The A-P-B System provides an absolute signal indication against opposing train movements on the same section of track between sidings, and a permissive signal indication for following moves which permits trains to follow one another as closely and with a greater degree of safety than on un-signaled double track.

Then decide which is the better investment

For more complete information ask for Bulletin 128A.

"Safety First"

GRS LACHINE QUEBEC

GENERAL RAILWAY SIGNAL COMPANY

OF CANADA LIMITED

GRS LACHINE QUEBEC

Office and Works, Lachine, Quebec

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GALENA OILS

HAVE NO EQUAL IN

QUALITY, EFFICIENCY and ECONOMY

SOLE MANUFACTURERS OF

Celebrated Galena Coach, Engine and Car Oils

LUBRICATION ON A GUARANTEED BASIS

ELECTRIC RAILWAY LUBRICATION A SPECIALTY

Perfection Valve and Signal Oils

Galena Railway Safety Oil—Made especially for use in headlights, marker and classification lamps.

Galena Long Time Burner Oil—For use in switch and semaphore lamps, and all lamps for long time burning, avoiding smoked and cracked chimneys and crusted wicks.

TESTS AND CORRESPONDENCE SOLICITED

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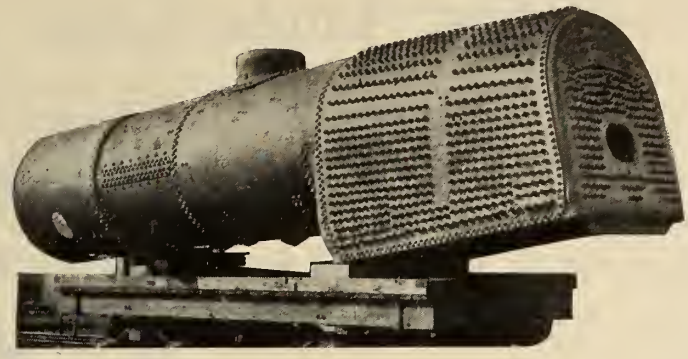


The Tate Flexible Staybolt

is a reliable standard for locomotive fireboxes.

We have yet to learn of one instance where the TATE FLEXIBLE STAYBOLT has failed to give better service than any staybolt used in locomotive boiler staying.

Better service, not only from the standpoint of staybolt durability, but also contributing to the longer life of the firebox, by the provisions that the Tate Bolt affords for the freedom of sheet movement under expansion.

Rigid firebox construction belongs to the practices of the past, unnatural and unreliable. Flexible connections in the staying members is the simplest method for allowing the firebox to expand under the least restriction.

When you apply Tate Flexible Staybolts to cover the zone of greatest sheet expansion, you have conserved the material or service life of both staybolt and sheet accordingly.

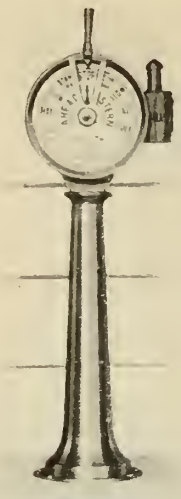
USED ON MORE THAN 575 RAILROADS.

Flannery Bolt Company — Manufacturers

Vanadium Building, Pittsburgh, Pa.

Canadian Allis-Chalmers, Limited, Toronto, Ontario

(Manufacturers for Canadian requirements)



Made in Canada

Patent "Duplex Gong" Telegraphs

Telegraphs for Engine, Twin Engine, Stokehold, Steering, and Docking.

Engine Room Indicators (Speed)

Engine Counters

KILL
LAST AD!

Chadburn's (Ship) Telegraph Co'y, Ltd.
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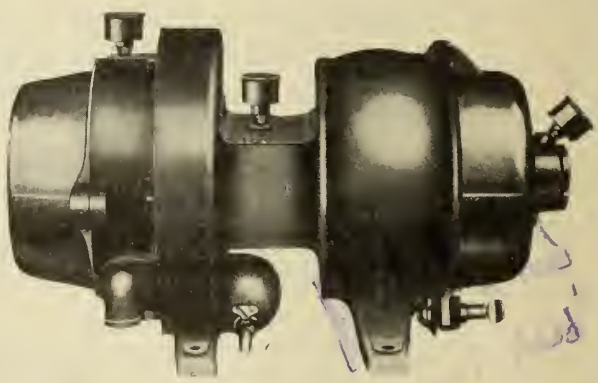
Sole Canadian Agents

Taylor & Arnold, Limited

Montreal **Winnipeg** **Vancouver**

The "Taynold" Incandescent Electric Headlight



Made in Canada

An Incandescent Headlight that complies with every railroad requirement in every province of Canada. A headlight that has proved efficient and economical.

Taylor & Arnold, Limited

Manufacturers of Railway and Marine Specialties

Montreal **Winnipeg** **Toronto**

Get the **"SAFETY"** Habit

USE

"DOMINION" Wire Rope

FOR DREDGES AND STEVEDORING WORK

The Dominion Wire Rope Company, Limited

Montreal and Toronto

General Service Cars

Otis Dump Cars

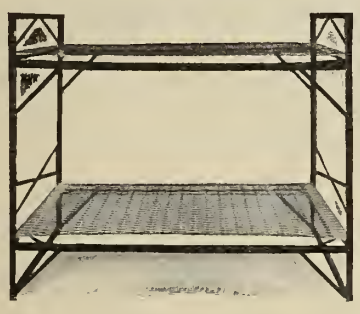
For Standard or Special Service

The HART-OTIS CAR CO., Limited, MONTREAL

–SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA–

"Ransome" Concrete Mixers

for Every Purpose.



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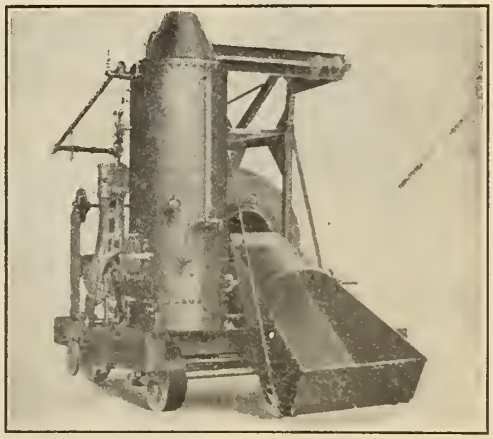
For Railroad and Contractors Work



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Lengthen the Life of Metal Work

It is a hard problem to keep rust and corrosion from eating the very life out of metal structures, therefore, economy demands the best possible preventive against these destructive elements.

CARTER'S
DRY RED LEAD

gives a perfect sealing coat that absolutely protects all kinds of metals from the elements that destroy them, and immeasurably lengthens the life of Metal Work.

We make Orange Dry Lead and Litharge, Special Dry Lead and Litharge, for Color, Varnish and Rubber Makers. Oxides for Potters and Storage Battery Makers.

All products are wholly Canadian made and highest standard qualities.

Ask us for quotations.

The Carter White Lead Co., Limited

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WE'RE AT WAR

It's of vital importance to speed up transportation.

It's a military necessity.

Hand Swing firedoors slow up the railroad.

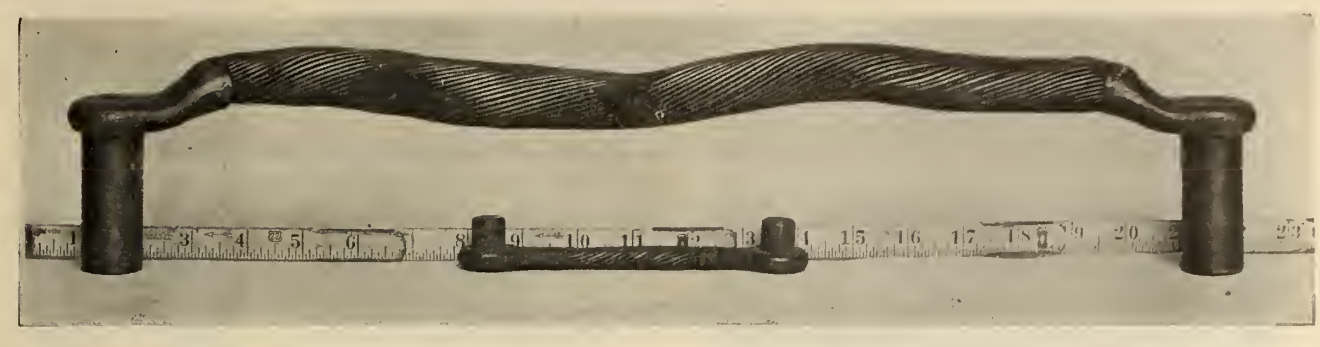
They let blizzards of cold air into the firebox and make 200 lbs look like a star.

Franklin Automatic Firedoors keep out this cold air they're closed nearly all the time.

They make free steamers and save coal.

Franklin Railway Supply Company

TRANSPORTATION BLDG. MONTREAL



An O-B Bond for Any Condition

O-B Compressed Terminal Rail Bonds are made in any size and any capacity for any requirement.

But from the smallest to the largest they are of the same unvarying quality.

Their terminals of pure copper flow smoothly, under the pressure, against the rail and make an intimate, enduring contact.

O-B Bonds have a long record of satisfactory service. Let them lower your track resistance.

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The Ohio Brass Company

Mansfield, Ohio

GRAND TRUNK RAILWAY SYSTEM

ALGONQUIN PARK

"Highlands of Ontario"

The Ideal Summer Resort for Camper, Fisherman, Canoeist

200 Miles North of Toronto. 285 Miles West of Montreal. 169 Miles West of Ottawa.
Good Hotel Accommodation. 2,000 feet above Sea Level.

Nominigan Log Cabin Camp—In the heart of one of the Best Fishing Districts in Canada.

New Log Cabin Camps

This sort of camp is new to the "Highlands of Ontario." They consist of log cabins constructed in groups in the heart of the wilds, comfortably furnished with modern conveniences, such as baths; hot and cold water always available. THE HIGHLAND INN at Algonquin Park Station—accommodation for 200 people, first-class service, reasonable rates.

Handsomely illustrated folder free on application to J. Quinlan, Bonaventure Station, Montreal, or C. E. Horning, Union Station, Toronto

G. T. BELL,
Pasenger Traffic Manager, Montreal.

W. S. COOKSON,
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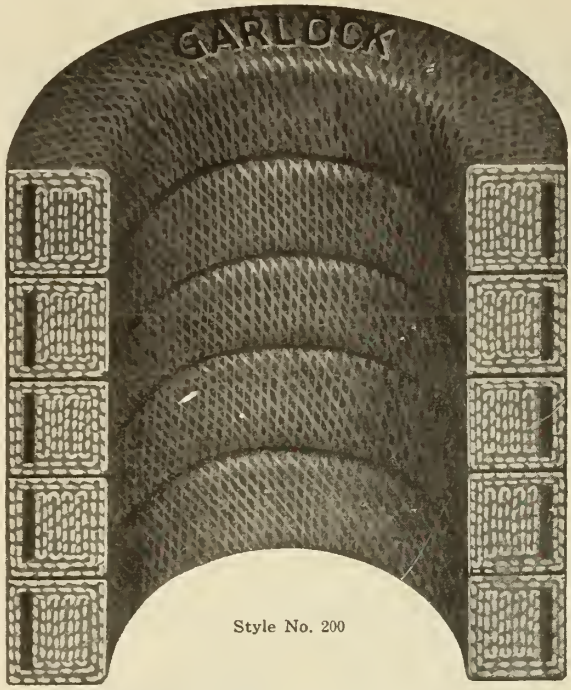

Style No. 200

Garlock High Pressure Piston Rod Packing

Is built up in rectangular form and uniform shape and exact sizes are thereby obtained.

Asbestos packing, which is rolled around a rubber core and afterwards distorted by running through a square die, does not retain its shape or size.

The best materials we can buy are used in the manufacture of our high pressure packing.

The length of service obtained from it is greater than that secured from other makes, therefore the labor cost of applying and adjusting is less.

Our packings are sold at net weights; weights of tubes and boxes are not included.

Every pound of our high pressure packing carries with it the Garlock guarantee of satisfactory and economical service.

We will promptly replace or refund the cost of any of our packings which may prove unsatisfactory to our customers.

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Oh Yes

It's First

Berry Brothers Locomotive Black

This modern giant—this triumph of modern engine construction, which pulls the Broadway Limited from New York to Chicago, must have a durable finish.

A finish that withstands the wind and weather and also the acid from coal smoke.

Berry Brothers Locomotive Black was used, of course.

For almost sixty years we have manufactured varnish for Railway use.

The quality of our goods is always uniform—always the same.

Ask us about LIONOIL
Rusts greatest enemy.

BERRY BROTHERS
(INCORPORATED)
World's Largest Varnish Makers
WALKERVILLE, ONT.

Our Target and Signal Enamels will not crack, chip or scale.

50 YEARS IN THE BUSINESS

As a pratical man it would interest you to see "Famous Five" files being made.

You would be satisfied with the quality of our steel; the procession of shaping, annealing, grinding, cutting, hardening and sand blasting would convince you of the efficiency of the finished product.

And you would have confidence in our method of testing each file before it leaves the factory.

Specify them when you order. They are:

Kearney & Foot American **Great Western Arcade Globe**

Made in Canada By

The Nicholson File Company

PORT HOPE ONTARIO

OVER 60,000,000 FILES A YEAR

CANADIAN NORTHERN
OVER 9,500 MILES IN OPERATION
The Canadian Northern Railway
Has Over 9500 Miles of Lines
Quebec City and Vancouver
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PLAN YOUR SUMMER VACATION—NOW

Whether Sport or Recreation is your object—either close at home or further afield. The greatest variety of Resorts to suit all tastes and all purses can be reached

CANADIAN NORTHERN ALL THE WAY

For Tickets, Reservations, Literature and Information, apply to

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CANADIAN NORTHERN RAILWAY

Moore System

This car heater will protect perishable freight in coldest weather at minimum cost. It is substantially built; thoroughly guarded against injury to itself; simple to operate. It cannot set fire to car even though car be wrecked. It can be used in any insulated car.

Refrigerator, Heater & Ventilator Car Co.

St. Paul, Minnesota

FOAMING

Foaming and Priming, whether resulting from alkali salts naturally existing in the water supplies, or foaming salts created by the use of soda ash and lime in water treating plants, or whether due to the presence of suspended matter, organic matter, or oil in the boilers, can be overcome by the use of

DEARBORN TREATMENT

Dearborn Anti-Foaming Preparations are serving this purpose in all districts where foaming trouble is experienced, and the cost is so low that it is a mere fraction of the savings and benefits derived from its use.,

Gallon samples of the water supplies required for analysis.

Dearborn Chemical Company of Canada, Limited

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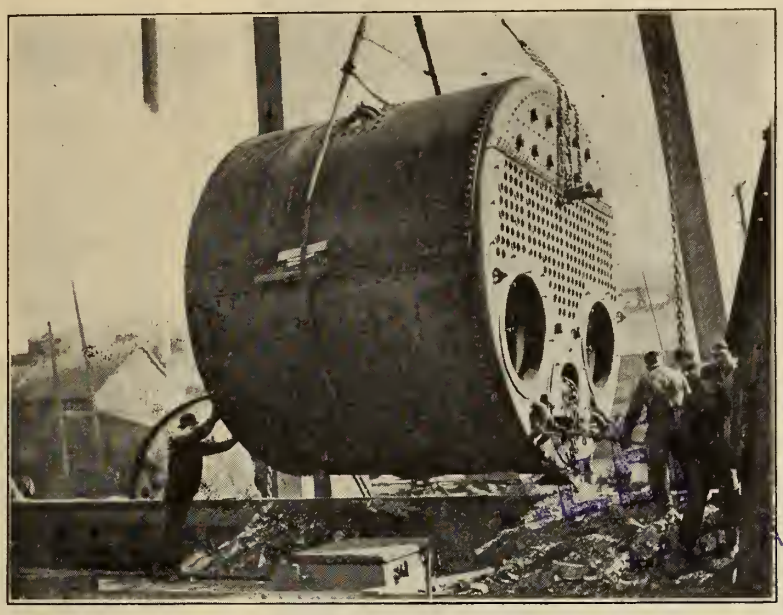

13 ft. x 11 ft. Clyde Boiler for Senator Derbyshire, weight 30 tons. Designed for a working pressure of 125 lbs., but allowed 131 lbs. by the Government Marine Inspector. This boiler has 212 tubes, including stay tubes 3½ inches diam. x 7 ft. 9 ins. long, three Morrison corrugated flanged furnaces of the "horse collar" withdrawal type, grates and smoke box. The steamer was laid under our shear leg at the close of navigation and the old boiler removed. Within 10 hours after the breaking up of the ice in our dock the new boiler was installed in the boat.

Steel Shipbuilders

Engineers and Boilermakers

Dredges, Hydraulic and Dipper Type; Steel Steamers, full Canal Size; Tugs, Barges and Scows

Marine Engines and Boilers, all Sizes

Polson Iron Works, Limited

Works and Office, Esplanade East, Toronto

Typical Railway Yard Scene. Showing "Imperial" Tie Tampers used as a pair.

"Imperial" Tie Tampers

may be operated from "Imperial" portable compressors or from permanent air lines. If our tie tampers are connected to switch or signal air supply pipes, they do not interfere with the working of the latter.

The Present Need

for elimination of hand labor is most pressing. Few fields offer more immediate and practical results by adoption of pneumatic appliances than Tie Tamping.

"Imperial" Tie Tampers

will handle any kind of ballast and do it more evenly and at far less cost than the best type of hand labor.

Bulletin 9023 tells why. Write our nearest office today.

Canadian Ingersoll-Rand Company, Limited

Commercial Union Bldg., MONTREAL, CANADA

Works: SHERBROOKE, QUE.

SYDNEY TORONTO COBALT TIMMINS WINNIPEG NELSON VANCOUVER

WHEN YOU GET UP CLOSE

YOU CAN BETTER APPRECIATE THE WONDERFUL QUALITY OF

DU PONT FABRIKOID
REG. U. S. PAT. OFF.

Its base is a specially woven, very strong cotton cloth. The base of coated splits is a thick, pulpy piece of flesh, much weaker than the cloth. Both are coated with practically the same materials. Both are embossed or grained in the same way.

Fabrikoid is fully guaranteed.

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APPEARANCE

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COMFORT

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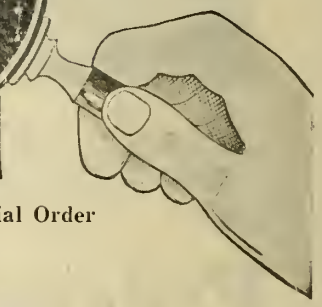
STRENGTH
(Equally Distributed)

VII
ORDER IT NOW



Every Car Builder Should Acquaint Himself With the Superior Quality of Fabrikoid. A Trial Order Will Convince You.

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Railroad Department Representatives
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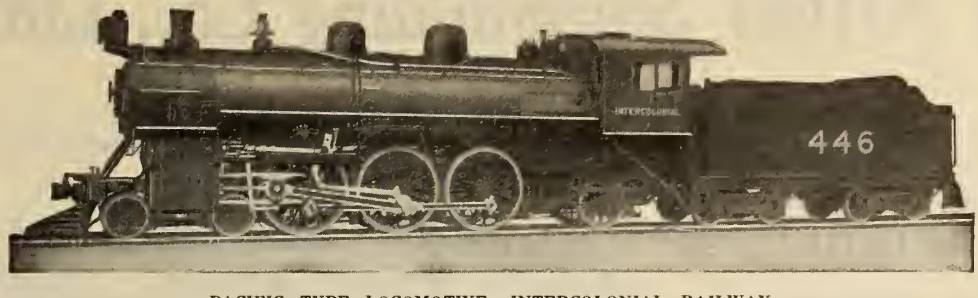
MANGANESE
Special Track Work
FOR
STEAM and ELECTRIC
RAILWAYS

We invite your enquiries for 1917 requirements.

Canadian Steel Foundries, Limited
P.O. Box 1630 - MONTREAL

Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE—INTERCOLONIAL RAILWAY
Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

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PAINTS AND VARNISHES

Made in Canada

Vessel Owners and **Marine Outfitters** will find just what they require in the Martin-Senour line of Marine Paints and Varnishes.

A product for every marine purpose, each fully guaranteed to best serve the purpose for which it is made.

"Bredells" celebrated submarine compounds and compositions used extensively by the world's largest Navies and Steamship Companies are manufactured exclusively in Canada by the The Martin-Senour Co., Limited.

Write us to-day for our catalogue and color chart of Marine and Submarine Paints and Varnishes. The finest book of its kind procurable. FREE FOR THE ASKING.

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PRODUCERS OF PAINTS AND VARNISHES
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Port Arthur Shipbuilding Co., Limited

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Designers and Builders of every type of vessel, for both Great Lakes and Salt Water Service. 700 ft. solid concrete dock for repair work of every description.

Most Modern Ship Building Plant on the Great Lakes

The Collingwood Shipbuilding Co.

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Steel Ships, Engines, Boilers, Castings, and Forgings

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK

Steamer J. H. G. HAGARTY

Two Dry Docks and Shops

EQUIPPED TO OPERATE

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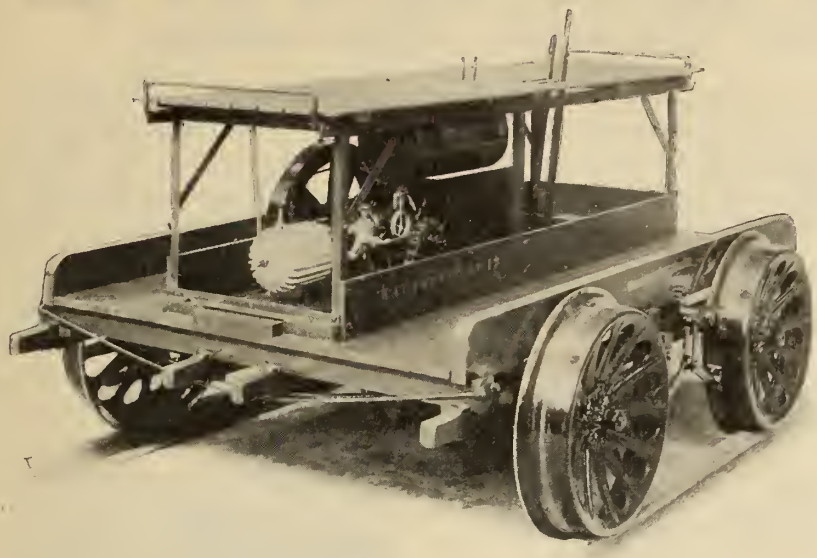

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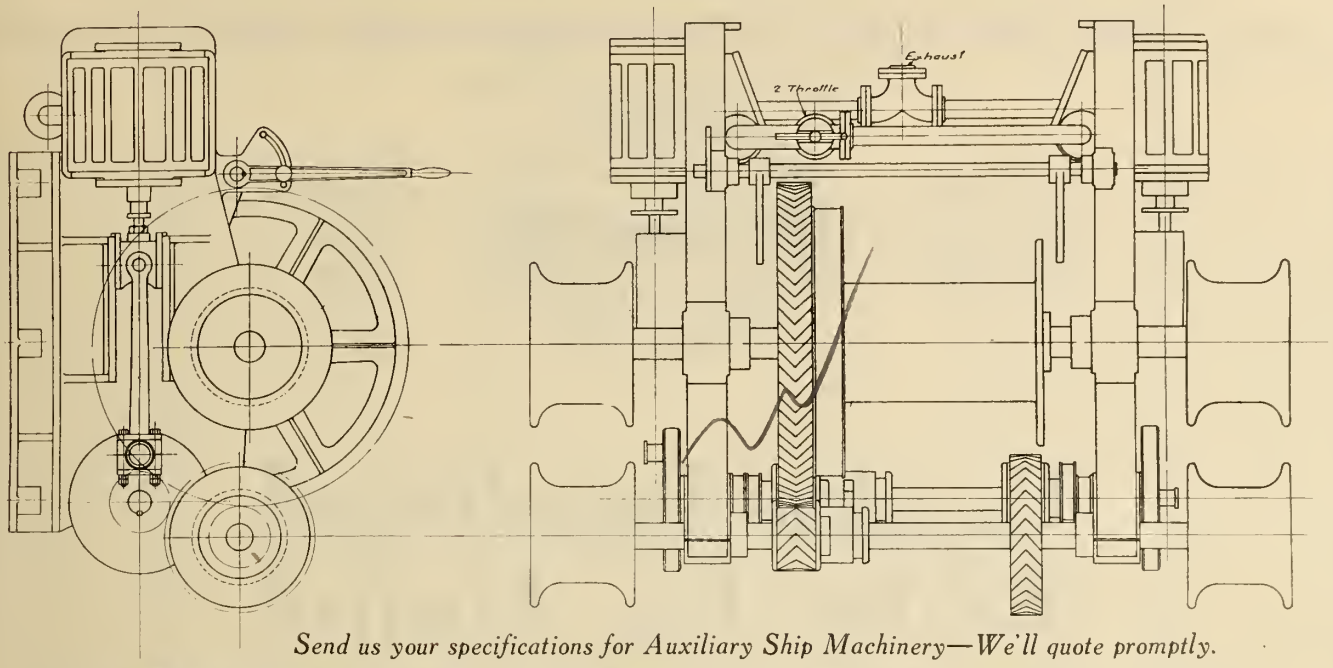

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Canadian Railway and Marine World

June, 1917.

Reports of the Board Appointed to Enquire into the Canadian Railway Situation.

The reports of the board appointed by the Dominion Government in July, 1916, to enquire into the railway situation in Canada were submitted to Parliament on May 2. The reports, with appendices, make up a book of 191 pages, 6½ x 9½ in. The board as originally appointed consisted of A. H. Smith, President, New York Central Rd., New York; Sir Henry L. Drayton, Chief Commissioner, Board of Railway Commissioners, Ottawa, and Sir George Paish, of London, Eng, formerly editor of The Statist. Sir George Paish having resigned, on account of inability to undertake the work, W. M. Acworth, of London, Eng., a college lecturer and author of some works on railway subjects, was appointed in his place. The three members of the board presented a brief report, which after reciting the matters to be enquired into says:—

In Sept. and Oct., 1917 two of the commissioners, the Chairman, A. H. Smith, and Sir Henry Drayton, spent some weeks inspecting the railways, travelling upwards of 10,000 miles, visiting all important points from Halifax to Vancouver and Prince Rupert, and taking the opportunity of meeting and conferring with many representative citizens. We desire to express our appreciation of the manner in which the officers of the various companies facilitated our journey and assisted us to obtain a knowledge of local conditions. We have had a physical examination made, in such detail as circumstances have permitted, of the Canadian Northern and the Grand Trunk Pacific Railways, by a corps of engineers under the supervision of Prof. Swain of Harvard University and the Massachusetts Institute of Technology. In addition to the information which we have obtained from our own enquiries and inspections and those of our staff, we have received voluminous reports and statistics from the different companies in reply to our enquiries on specific points. Two of our number have held formal hearings in Toronto into the affairs of the Canadian Northern Ry. Co., and in Montreal into the affairs of the Grand Trunk and Grand Trunk Pacific Companies. Since Mr. Acworth's arrival we have frequently met in Ottawa and in New York for discussion of the remaining matters referred to us. We have taken the situation as it is, and find ourselves in agreement as to the necessity for constructive aid to bring the railways through the present crisis. We differ, however, as to the extent and method of government help desirable, and as to the increase and character of government liability and interest now and for the future. It has, therefore, been found necessary to submit a report of the two concurring commissioners, with a brief statement of the minority recommendation.

THE DRAYTON-ACWORTH REPORT.

The report signed by Sir Henry L. Drayton and W. M. Acworth, covers 82 pages of the book, in which the subject is dealt with under the following headings:—

1.—Canadian Railways—Mileage, capital, and state aid; apportionment of mileage; revenue, gross and net; investment in road and equipment; return on capital; government aid in general—to Canadian Northern, to Canadian Pacific, to Grand Trunk, to Grand Trunk Pacific; total public investment; proportion of public investment; growth of Canadian railways.

2.—The Grand Trunk System—Grand Trunk Pacific finance; Grand Trunk liability for Grand Trunk Pacific; Grand Trunk Co.'s proposal; the Grand Trunk case; inception of the National Transcontinental; letter from the President of the Grand Trunk; hearing of Grand Trunk officials at Montreal; Grand Trunk Pacific case; commission's conclusions; the parent Grand Trunk Co.; Grand Trunk maintenance expenditure; Grand Trunk capital expenditure required; effect on Canadian business; commissioner's recommendation.

3.—The Canadian Northern System — Position in 1914; annual report for 1916; estimates for 1914 and 1917; comparison with Canadian Pacific; prospective requirements of Canadian Northern; value of Canadian Northern undertaking—cash investment, physical basis, going concern; conclusion as to Canadian Northern.

4.—Possible methods of public control —Government operation discussed and rejected; the Canadian Pacific position one obstacle; further reasons against government operation; receivership discussed and rejected; transfer to a new body recommended; suggested transfer of all the railways to the Canadian Pacific discussed; suggested transfer of the whole or a portion of Canadian Northern to Canadian Pacific discussed; possibility of forming a commercial company discussed—the Mexican precedent, the New York Subway precedent; Canadian railways should be under Canadian control.

5.—The Dominion Ry. Co.—Government operation not recommended; recommendation of independent board of trustees; constitution of board, and tenure of office; board to be non-political; board to be permanent and self-perpetuating—Australian experience; railways not a proper subject for direct parliamentary control; growth of extra-parliamentary functions of the state; private interests and public interest; control of Dominion Railway by Railway Commission; relation between trusts and their employes; incorporation of the Dominion Ry. Co.; Transfer of stocks to trustees; the Canadian Northern shareholders; charges of misappropriation unfounded; Canadian Northern successes and failures; arbitration recommended; the Grand Trunk shareholders—terms of purchase recommended, real value of Grand Trunk property; the Intercolonial and National Transcontinental—transfer of National Transcontinental recommended, transfer of Intercolonial recommended (in the local interest, in the general interest, in the interest of good management), minor recommendations, legal position of trustees; operation and finance of Dominion Ry. Co., operation to be on a commercial basis, wide powers to be given to trustees, financial responsibility of government, prospects of Dominion Railway, specimen economics resulting from combination.

6.—The Dominion and the provinces—publicity—general—Railway Commission control; Commission to report on charters, and on subsidies and guarantees; overlapping of Dominion and provincial control; audit and publication of accounts; railway councils; railways in excess of existing requirements; highway improvement; the Hudson Bay Ry.; steamship connections; tendency of railway rates to rise; necessity for immediate action.

Sir Henry L. Drayton and W. M. Acworth summarize their conclusions and recommendations as follows:—

The mileage of Canadian railways is very great in proportion to the population of the country. It has increased out of proportion to the increase of population. Canada's natural waterways make railways less absolutely necessary than in other countries. The net return is so low as to prove that more railways have been built than can be justified on commercial grounds under present conditions.

The public investment in railways is very large. The total amount of public capital involved in direct construction of Government lines, and cash aid, land grants and guarantees to private companies, is $968,451,000, not counting the value of lands still unsold. Public aid to the principal companies, including subsidies, land grants, and guarantees, amounts to over $680,000,000. In the case of the Grand Trunk Pacific it amounts to nearly two thirds of the total investment; in the case of the Canadian Northern to over three quarters. There have been three phases of company development: unaided enterprise, assistance by subsidies and land grants, assistance by guarantees. A guarantee policy is dangerous and its wisdom questionable. The development of Canada justified two transcontinental lines. It did not justify three. The Grand Trunk and Canadian Northern should have been amalgamated.

The Grand Trunk Pacific system has cost nearly $200,000,000. The interest charges amount to over $8,800,000 a year. The net income last year was $826,653. The liability of the Grand Trunk Co. for interest amounts to over $5,000,000 a year at present, and will rise to over $7,000,000 in 1923. We cannot recommend that the Grand Trunk Co. be unconditionally released from their liability. The responsibility for the National Transcontinental line rests mainly with the Government, but that for the Grand Trunk Pacific proper belongs primarily to the Grand Trunk. The Government has voluntarily relieved the Grand Trunk of all responsibility for the National Trans-

continental. In respect to the Grand Trunk Pacific proper the government is fully entitled, morally, as well as legally, to call upon the Grand Trunk Co. to fulfil its contract. The Grand Trunk Co. proper has made unjustifiable charges to capital. Its lines have not been adequately maintained. More than $21,000,000, which ought to have been spent on maintenance in past years, has not been spent. New capital expenditure of over $30,000,000 is immediately required. The country is suffering from the company's inability to give adequate service. The G.T.R. ought to be managed in Canada, and not from London. We recommend that the control both of the Grand Trunk Pacific and of the Grand Trunk be assumed by the people of Canada on terms hereafter set out.

The Canadian Northern has been financed mainly by the issue of guaranteed securities. Till 1914 it met the interest from its own resources. Since that date the government has assumed very heavy obligations on behalf of the company. There is little prospect that the company would be able in the near future to relieve the government of these obligations. The company's estimate of its future capital requirements is too low; and its estimates of probable growth of earnings have been and still are unduly sanguine. We estimate that as a separate undertaking it would require fully $70,000,000 of new capital within the next five years. We do not recommend that further public aid be given to the Canadian Northern as at present constituted. The Canadian Northern common stock represents no cash investment, and has no present value, either on the basis of the cost of reproduction of the property, or on the basis of its earning power. We recommend that the public take control of the Canadian Northern Co. on terms hereafter set out.

On the assumption that the people of Canada take control of the Grand Trunk, Grand Trunk Pacific, and Canadian Northern, we consider possible methods of management and operation. We do not consider that operation by a minister directly responsible to parliament would be in the public interest. It would not secure better service or lower rates. If the Government operated these railways, it would be bound in fairness to the Canadian Pacific shareholders to take over their railway also. The Canadian Pacific gives good service and should not be interfered with. Special objections to direct government ownership and operation are: That Canadian railways operate more than 7,000 miles of line subject to the foreign jurisdiction of the United States; that the Canadian government resources are required for war purposes. We therefore reject the idea of direct government ownership and operation.

We do not recommend that the Grand Trunk, Grand Trunk Pacific and Canadian Northern Companies be allowed to go into the hands of a receiver. We recommend that the control of these three companies be transferred to a new body.

We have discussed and rejected the following suggestions:—Transfer of all three railways to the Canadian Pacific; transfer of the Canadian Northern or a portion of it to the Canadian Pacific. There is no possibility of forming a new commercial company to take over the three railways. Neither the Mexican precedent, under which the government becomes a majority shareholder, nor the New York Subway precedent, under which the public authority shares the profits with the private shareholder, is applicable to this case.

Having come to the conclusion that direct ownership and operation by the government is to be avoided, and that ownership and operation by a commercial company is not possible, we recommend that a new public authority, a board of trustees be incorporated by act of parliament as the "Dominion Railway Company"; and that the Canadian Northern, Grand Trunk and Grand Trunk Pacific be transferred to this body. We recommend that the Government assume responsibility to the Dominion Railway Co. for the interest on the existing securities of the transferred companies. We recommend that the Intercolonial and National Transcontinental be also transferred to the Dominion Railway Co., for reasons which we give hereafter. We recommend that the whole of the Dominion railways be operated by the trustees as one united system, on a commercial basis, under their own politically undisturbed management, on account of, and for the benefit of, the people of Canada.

We recommend that there be five trustees, three railway members, one member selected on the ground of business and financial experience, and one as specially possessing the confidence of railway employes; that the original trustees be named in the act constituting the board; and that their tenure of office be substantially the same as that of judges of the Supreme Court. We recommend that the original trustees retire after 3, 4, 5, 6, 7 years, respectively, according to a prescribed scheme; that they be eligible for reappointment; and that all appointments subsequent to the original statutory appointments be by the Governor General in Council on the nomination of the trustees themselves. We lay stress of the importance of the board being non-political, permanent, and self-perpetuating; and in this connection point to the experience of the Australian State Railways.

We give reasons for concluding that railways are not a proper subject for direct parliamentary control. We point to a general tendency in modern democracies to withdraw certain subjects from this control. And we show that under parliamentary control the general interest of the whole community tends to be subordinated to the particular local and individual interests. We recommend that the Board of Railway Commissioners be extended to include the Dominion Railway Co.'s system. We give the reasons for our recommendation that one of the trustees shall be appointed on the ground of his possessing the confidence of the railway employes.

We recommend the transfer to the trustees of the common stocks of the Canadian Northern, Grand Trunk and Grand Trunk Pacific subject to certain conditions and reservations made hereafter. We recommend the transfer to the trustees of the Intercolonial and National Transcontinental Railways for reasons which we give hereafter.

We deal with the question of the compensation to Canadian Northern shareholders. We find the charge that Messrs. Mackenzie and Mann have misappropriated public moneys unfounded. We find that the Canadian Northern shareholders possess a system of which the lines are well located and economically constructed, and that they have raised the necessary money with considerable financial skill and at moderate rates of interest, but that they erred in unwisely duplicating lines and reaching out into unremunerative territory. We recommend that the question be considered whether Canadian Northern shareholders shall be permitted to retain a moderate proportion of the $60,000,000 shares which they now hold; that the precise proportion, if any, and the relation of that proportion to their share of any future profits of the Dominion Railway Co. be fixed by arbitration.

We recommend that the entire share capital of the Grand Trunk, guaranteed, preference and ordinary, be surrendered to the trustees in exchange for an annuity based on a moderate but substantial proportion of $3,600,000, the average sum paid as dividend in the last 10 years; and that this annuity should increase by 40 or 50% after the first seven years. We recommend that the precise figure be fixed by agreement and that it be left to the directors of the Grand Trunk Co. to apportion the annuity among the five classes of Grand Trunk shareholders, and to procure such assents of their shareholders as are legally required to complete the transfer. We give reasons for considering that this recommendation is generous to the Grand Trunk shareholders, and why the shareholders in their own interest will do well to accept it.

We recommend the transfer to the trustees of the National Transcontinental, in order that it may take the place it was built to take as part of a great inter-ocean highway, and because its financial position would be hopeless if it terminated in a dead end at Winnipeg. We recommend the transfer of the Intercolonial, in the interest of the Maritime Provinces to which the Intercolonial at present can only give a local service with no adequate terminals beyond Montreal; in the interest of the taxpayer who has a right to demand efficient and economical expenditure of his money; and in the interest of the railway staff who will secure the wider opportunities of a great system. We recommend that in future the Intercolonial be required to pay local taxes on the same basis as the other railways; and that the inhabitants on the line receive statutory protection against increase of local railway rates.

We make recommendations as to non-railway property of the transferred undertakings, getting in minority holdings of shares and outstanding titles to land, arrangement with the holders of Canadian Northern 5% convertible income debentures. We deal with the legal position of the trustees; and point out that the Canadian Northern, Grand Trunk and Grand Trunk Pacific companies will continue to exist; and that consequently the rights of their security holders will remain undisturbed. We recommend that the trustees take over each railway as soon as the transfer can be effected, with the purpose of ultimately operating them all as a single unified system. We deal with the finances of the Dominion Railway Co. and point out that the Intercolonial, with no bonded indebtedness, has a considerable net revenue, and offers security on which new capital can be raised. We recommend the creation of a general and refunding mortgage of unlimited amount, to be issued as required. We recommend that the act of parliament provide that the operation of the company shall be on a commercial basis, and that the trustees make no general reduction in rates until the property earns a reasonable net return. We recommend that there be given to the trustees the widest powers in the management of property.

We have endeavored to estimate the annual liability of the government to meet interest unearned during the first few years of the new scheme, and we put it at about $12,500,000 a year. We think this amount should diminish steadily but not slowly; and that with proper econo-

mic and politically undisturbed management the attainment of a satisfactory financial result is only a question of time. We give specimens of the large economies which should result from combined operation.

We recommend the enlargement of the functions of the Board of Railway Commissioners, that it have jurisdiction over all Dominion railways; and report to parliament on all proposed grants of charters, subsidies, and guarantees. We deal with the conflict of Dominion and provincial jurisdictions. We recommend that, to prevent this in future, the Governor in Council should in certain cases disallow provincial acts, and that no railway company should operate under both Dominion and provincial charters. We recommend that there be a continuous public audit of the Dominion Railway accounts, and that full and comprehensive reports be made annually to parliament. We recommend the establishment of railway councils to bring together the railway management and representatives of public interests.

We point out that the existing railways are in excess of public requirements and show how much traffic is required to make a railway profitable. We show that the cost of hauling grain to the station is sometimes as great as that of carriage from the station to Liverpool, and recommend that the question of highway improvement and motor haulage be taken into consideration.

We recommend that future expenditures on the Hudson Bay Ry. be reduced to the lowest possible amount.

We point out that railway rates are more likely to rise than fall in future. And we lay stress on the necessity for immediate action lest Canada should suffer from railway congestion even worse than that of the past winter.

Report of the Chairman, Alfred H. Smith.

Following is the report presented by the Chairman, A. H. Smith, President, New York Central Rd.:—

This commission was asked to report upon the general problem of transportation in Canada. Several subdivisions of the subject quite naturally suggested themselves, and were made a part of the problem to which the commission was requested to give attention. Practically all of the subdivisions have received consideration, but the general problem is essentially a question of what to do with the railways of Canada. To a constructive solution of this important problem, the commission has given its attention.

The General Problem of Transportation in Canada:—For a proper understanding of the problem, a knowledge is necessary of the history of railway development in Canada, especially as affected by the public policy, which has found expression in governmental acts. Canada early recognized that its growth depended upon the construction of railways. The large productive areas of the country could be served only in a limited way by its splendid system of waterways. Even before the Eastern provinces became united into the Dominion of Canada, the Grand Trunk had become an important railway line, serving the people both of Canada and the United States. The Intercolonial, as is well known, was constructed out of public funds, and largely for the purpose of bringing more closely together, commercially and politically, two more or less separated sections of the Dominion. Long in advance of its justification upon a commercial basis, an all-Canadian transcontinental line was projected by the government and completed with extensive public aid by a private company as the Canadian Pacific. Because of the great distances which separate parts of Canada's producing territories from the consumers' market, development of the country's resources depended upon railway building, while cheap transportation was necessary to enable the people to compete with other producers. The people of Canada, therefore, gave such aid as was necessary to procure for themselves railway lines that would bring the country's resources into use and keep themselves in touch with the outer world.

Cheap transportation depends upon careful investment and efficient management. In the usual case, these are most likely to be found where private initiative and proper incentive to effort are employed. So far, Canada, for the most part, has pursued the policy of leaving to private enterprise the management of its transportation machinery. The Intercolonial, which has been under governmental control since its beginning, is an exception. But this line, I am informed, usually pays nothing to the government as a return upon money invested in the property. On the contrary, it has frequently called upon the government for aid in meeting expenses of operation. The investment in this line is large, some authorities placing it as high as $348,000,000, including loss of interest. Evidently its rates are too low or its expenses are too high, but the use of this line, at the rates enforced, is regarded in some quarters as a right of the people in the Maritime Provinces. If the Canadian people have ever made an agreement, or adopted a policy which may be construed as creating that right, the contention may be correct; it is, at any rate, within the power of government to grant such a privilege. The fact is referred to merely to point out in connection with what I shall say later that a railway may be built either as a commercial enterprise and for ordinary commercial purposes, or as a public undertaking and for other purposes, which are within the proper scope of Government. The two should not be confused. But it should be kept in mind that when government builds and operates a railway which does not pay its way, including proper maintenance and interest upon investment, taxation is relied upon to support transportation upon that line. The burden is shifted from the user to the general public, but the processes by which this is done are often so complex as to obscure the facts, and actual costs are not ascertainable.

The Canadian Pacific affords a later example of the internal development policy of the government. That road had its beginning in a transcontinental project that was proposed to be carried out directly by the government. At an early date, and it seems to me wisely, that purpose was altered; it was decided to have the road completed by a private company. But the undertaking was large, the population sparse, the prospect of profit remote, so that the government not only turned over to the company the uncompleted road upon which it had expended a large sum, but it also extended to the company generous aid in he shape of land grants, cash subsidies, guarantees, and loans. It is true that value was given to the land grants largely through the building of the road and the opening of the territory to settlement. The important point here is that the Canadian Pacific owes its later and continued success, not only to the skill and enterprise of its builders and managers, but to the fact that through liberal direct aid, it was able to begin business with a small charge against its earnings on account of borrowed capital. Thus favorably started, the company was able to devote its energies and surplus income to the development of the road and the country.

A new transportation problem arose with the settlement of the prairie provinces, where the land is devoted chiefly to raising grain and live stock. Owing to the long hauls that intervene between the producer and consuming markets, freight charges absorbed a considerable part of the proceeds. The Great Lakes afforded the least expensive route to the east and tidewater. But these lakes are open only part of the year, and navigation closes before the season's crops can be moved from the lake ports. With the filling up of the country and consequent increase in production, came a general demand for additional means of transportation. While land speculation probably had no little influence, the farmer felt the effect of inadequate facilities, and any project that promised relief appears to have found approval among citizens who were able, through their legislatures, to bring public aid to the development of these enterprises. Railways, therefore, were not only actively in demand, but railway builders were popular and had little or no difficulty in obtaining public support for proposed new lines. The Canadian Pacific stood as an example of success to be repeated by newer railways. Unfortunately, too little attention appears to have been given to the underlying facts which actually made that road what it was. Experienced men apparently believed that a second Canadian Pacific might be had if they could but lay a transcontinental road, build great hotels, passenger terminals, and operate ocean steamers. These things were only the outward evidences and not the cause of Canadian Pacific's prosperity. It may even be that they contributed little to the strength of that company's financial condition, if due account be taken of all the costs, investment as well as operating, involved in carrying on such enterprises.

In May, 1903, a royal commission on transportation, of which Sir William Van Horne was chairman, was appointed "to consider questions affecting transportation of Canadian products to the markets of the world through and by Canadian ports, with a view of placing the Canadian producer in a position to compete, and compete successfully, through all Canadian ports with the producers and exporters of other countries." The report of this commission is interesting. It clearly reflects the effect of the outlook which great opportunities and a land boom had upon the minds of the people. All kinds of transportation projects were recommended. For instance, the Grand Trunk Pacific was to be extended to Moncton; the Intercolonial was to be extended to Georgian Bay, etc. New canals were to be built, and old ones widened and deepened. This commission also recommended a bounty for Canadian-built ships, toll-exempt canals, additional waterways to be opened at public expense, and the acquisition of water terminal

lands out of public funds. In other words, it was clearly the intent that transportation should be stimulated by subsidies from the public treasury. It would now seem that there could not have been in sight enough traffic to justify the extensive development here recommended. However, many of the things proposed in this report have been done, and other ambitious schemes not here mentioned have since been brought out. The point in mind is that without making a specific declaration of the fact, as far as I know, Canada's policy for years appears to have been to promote the public welfare by means of building or aiding in the building of transportation lines throughout the Dominion.

It is unfortunate that Canada did not have a policy of regulation in this period which could have prevented needless duplication of lines and facilities. Competing lines have been built where effective regulation could have saved a large part of the investment, while completely satisfying every reasonable and proper need for service. Instead of co-ordination and conservation under government supervision, railways were permitted to duplicate plant in fields not yet productive enough to support the one; the government, on the other hand, was, in one way or another, aiding both projects, if it had not indeed itself promoted either or both projects. Very naturally, it has not and could not have obtained the benefit which should have followed a correct programme of government aid. The policy of government aid makes the need for regulation of railway building more necessary even than where private capital is depended upon, for in the latter case the proposal must at least have a promise of commercial success before capital can be induced to come in and give it support. To the absence of such regulation must be charged responsibility for no small part of the railway problem of today.

We may well enquire here as to the effect of this policy upon the three principal systems. The Grand Trunk Ry. Co., feeling no doubt that its own traffic field had been invaded by the government-aided Canadian Pacific, desired in turn to enter the promising western territory. Accordingly, it proposed to build a line from North Bay to the Pacific coast. Public aid was required and granted in a way to ensure the building of the road. If any serious thought was given to co-ordinating existing or proposed roads, and to utilizing them for the public good, it did not find public expression in any constructive way. The G.T.R. Co. evidently felt confident in the success of its plans, for it pledged its own credit in aid of the extension, and entered into contracts which it now finds quite beyond its ability to carry out.

Canadian Northern interests, directed by Mackenzie, Mann & Co., who since an early date had been operating local lines in Manitoba, seized the opportunity afforded them for expansion and rapidly extended their rails throughout the prairie region. The records show that the Canadian Northern had a large mileage on the prairies before the projection of the Grand Trunk Pacific; so that when the extension plans of the Grand Trunk became a part of the national policy, as they did become, the Canadian Northern was added to the number of those which wanted to own a transcontinental system and one as fully complete and self-contained as was that of the Canadian Pacific. Hence, we find two new companies, both built largely upon public credit, striving for first place in a field which, as for transcontinental transportation, or even as for connecting Eastern and Western Canada, was already occupied. Besides having the Great Lakes waterway, there could have been barely enough business to support one additional line, and that only by the exercise of economy in operation and prudence in investment.

The Canadian Pacific, enjoying splendid credit, with adequate powers and resources, and keenly alive to the possibilities of losing business to competitors challenging its supremacy everywhere, then entered the contest by undertaking to build new lines in an effort to protect its sources of revenues. The stimulation felt throughout the country by the influx of settlers and by the importation of so much new capital not only created a boom, but it quite naturally affected prices for labor and materials, sending these soaring; the increased prices in turn contributed largely to the higher costs which are now reflected in the construction accounts of the new roads.

This brings us fairly to a recognition of the fact that while the policy of public aid to railways had originally been founded on the urgent need for transportation to open up a new county, to develop its resources, and to unify Canada commercially and politically, it was carried far beyond the limits warranted by the original exigency. It appears to me that the responsibility is as much the government's as the private companies'. Without enabling legislation and the extension of government credit from which all received their essential support, the companies could not have expanded and overbuilt. This policy, in so far as it aimed at the development of Canada, appeals to me as sound, and fully justified in its inception, but it needed to be supplemented by some form of supervision that would have ensured to the people the benefits of that policy without the losses that have followed the effort to assist development indiscriminately.

The situation must be faced as it exists. It is not possible to undo what has been done; the money which has been spent cannot be recalled. The immediate and obvious thing to do is to adopt a constructive and discriminating programme, first, for correcting the conditions which necessitate the continuing loss and waste, even where that would require the abandonment of useless property, and, second, for controlling new construction. The scrap heap is frequently the most economical disposition available for inefficient plant and machinery.

Status and Usefulness of the Three Transcontinental Railway Systems:—The Canadian Pacific Ry. System; the Grand Trunk Ry. System (including the Grand Trunk Ry., the Grand Trunk Pacific Ry. and their several branches); the Canadian Northern Ry. System.

The Canadian Pacific Ry. is essentially self-contained and self-sustaining. I agree with my collegues as to its financially strong position. It has world-wide commercial strength. As a result of the aid and privileges extended by government, together with the prudence and progressiveness of its management, which has extended its field of activity over nearly all Canada, and through its steamship lines and commercial organizations throughout a large part of the world, it is a success. The C.P.R. is well built, well maintained and has adequate terminals and equipment. It is efficiently operated. It is somewhat at a disadvantage in crossing the mountains, and elsewhere it has gradients that, compared with more recently built lines, do not make for as good trainload and operating efficiency. It is assumed that the C.P.R. will make improvements as the need for them arises, for it is fully able to do so. Accorded reasonable treatment, that company will continue, I am sure, to give good service, and I believe the best interests of Canada will be served by continuing the present status of the C.P.R. The introduction of government railway competition, which might have no regard for investment or cost of operation, would be unfair and, in the end, would react disastrously upon the Canadian people. The regulating power affords to the people of Canada adequate protection in the matter of rates and services, and such power should likewise protect the company.

The Grand Trunk Railway Co.'s fortunes are bound up with the Grand Trunk Pacific. It stands as guarantor for large sums of money invested in the railway, and has advanced millions from its own resources in an effort to develop the western line and its subsidiary properties. The Grand Trunk Pacific Development Co. has absorbed many millions of Grand Trunk capital without definite prospect of return, and to the Grand Trunk Pacific Branch Lines Co. large construction advances have been made. Not only is the Grand Trunk committed for many millions, but the government has directly invested large sums of money in this property and guarantees other large sums, the total of which exceeds $127,000,000.

The Grand Trunk Pacific was located on a scale that would do credit to any single track line. There is not enough business to justify such an outlay, and the prospect for business which will warrant the cost seems quite remote. For long distances, sections of this line parallel one or more other lines. That part of the Grand Trunk Pacific lying between the Rocky Mountains and the Pacific coast is in a country which appears to have abundant natural resources. In time, these may be developed to the advantage of this road. The port of Prince Rupert is suited for a large ocean traffic, which is non-existent. The development of Alaskan trade seems to present the most immediate possibility for this port and railway. The road west of Winnipeg has some disadvantages on account of expensive trestles and instability of embankments. It has good grades, but inadequate terminals at important places. It has sufficient equipment but lacks feeders. From the Rocky Mountains to Winnipeg, the presence of a parallel road raises a question as to whether the Grand Trunk Pacific line is not the best adapted by location and physical condition to handle the trunk line traffic. If it is not the best, then the disposition of this part of the road, with its branches, naturally depends upon its usefulness as a road serving local interests. From Winnipeg east to North Bay and Port Arthur, the Transcontinental and Grand Trunk Pacific railways together can give efficient service as a connecting link between the railways of Eastern and Western Canada. This road also affords a good line for traffic moving via the Great Lakes. In fact, it is probably the best route of any for hauling bulk commodities at low costs.

Officers of the Grand Trunk Ry. Co. claim that the government is morally bound to relieve the company of the Grand Trunk Pacific, because the government is responsible for the failure of the project, having permitted a rival company to enter the field. The rival line, however, has been constructed at a lower cost per mile, and manages to get enough

traffic to pay its operating expenses and a large part of its fixed charges, which cannot be said of the Grand Trunk's system west of North Bay. I feel that I am not called upon to discuss the merits of the Grand Trunk's claim against the government. I have no doubt the government has observed at least the letter of its contract. Standing alone, with efficient operating conditions imposed, there is no reason, within my knowledge, why the Grand Trunk Ry. proper should not become a profitable operation. It occupies a good territory, reaching some of the best traffic centres in the United States and Canada, and has American connections that ought to contribute to its welfare. The company needs terminal improvements in cities and modern equipment, especially locomotives. The need for equipment is pressing, and should be met.

The Canadian Northern Lines, particularly in the prairie provinces, appear to be advantageously located in view of traffic conditions. Inspection of the property brings out the fact that this road was built with proper regard for economy, and the creation of a permanent public service utility. In some instances, the system has extended its lines where it should have obtained a traffic interchange agreement or the joint use of facilities instead, at least until the traffic had grown enough to justify further expansion. A public policy intended to develop and serve the country as a whole, at the lowest cost, would have enforced arrangements which would have obviated the needless duplication of facilities. The line from Yellowhead Pass to Vancouver, in part at least, may be unnecessary, but it is there by the joint action of government and the company. The character and capacity of this line through the Fraser River Canyon, where it is alongside the Canadian Pacific for about 200 miles, would suggest that no more money should be spent for double tracking or revising grades on either of the railways for years to come. From Yellowhead Pass to Edmonton, the proximity of the Grand Trunk Pacific places two lines where one affords abundant capacity.

The invasion of the east by the Canadian Northern now appears to have been unwise, but condemnation thereof must be tempered with a knowledge of the conditions which forced this extension. There was a public demand for railways. All Canada was enthusiastic over the prospects of a rapid growth in wealth and population. Railways were on a competitive basis, and the public stood ready to back any new railway enterprise, since that meant a rival carrier, and, incidentally, a new business in construction. There was no regulation which enforced co-operation among rival lines. The Canadian Northern, seeking to expand and become a profit earner, quite naturally desired to get all the traffic it could, and to hold all it got for as long a haul as possible. As a result, it undertook to do what appeared to be necessary under the conditions then existing—that is, to extend its line to both oceans.

An inspection of this company's property shows that generally it is of a type of construction well suited to its needs, and that the builders have installed it at a cost which, by comparison, seems small. Nowhere was there evidence of waste in the construction work itself. It is true that the company had some construction under way, or planned, that appeared wasteful because unnecessary, but this is due, I understand, to the unregulated competitive system, or to bargains with public authorities. The building of expensive terminals in cities already supplied with adequate facilities affords an example of duplication for which the public must eventually pay. However, in the absence of restraint and regulation by consistent public authority, it is difficult to determine how the company could have avoided this.

The precarious financial situation of the Canadian Northern is due, in part, to its uncompleted condition, and to the fact that needed capital cannot be obtained on its own resources, especially during the period when capital is so greatly in demand by powerful governments. This system is not at present able to earn all of its fixed charges. As important parts of the system have but recently emerged from the construction period, it would be truly remarkable if it were able to do so. It does earn a very large proportion of such charges, and probably could earn all of them but for the burden of eastern extensions and duplications that have been placed upon it. Practically all commercial enterprises, and particularly railways, must go through a development period. The Canadian Northern is short of equipment. With the return to normal conditions, and provided with the capital necessary for equipment and for additional local facilities, this road can, in my judgment, work its way out in a reasonable time.

Reorganization.—We are asked to make suggestions in regard to "the reorganization of any of the said railway systems or the acquisition thereof by the state; and in the latter case, the most effective system of operation, whether in conjunction with the Intercolonial Ry. or otherwise." The first practical question is, therefore, the need of reorganization of any of these three transcontinental systems; the second is whether they should be acquired by the state; and the third is whether the status of the Intercolonial can be changed; and, if so, can the road be advantageously grouped with either of the three systems.

In such suggestions as I shall make, I am influenced by consideration of the public policy as evidenced by past governmental acts. I further assume that the existence of these roads through the direct government aid and sanction is conclusive evidence of the fact that the people really desire them. That they were built in advance of their need for ordinary commercial uses—a fact which is emphasized by the present abnormal economic situation—does not appear to me a sufficient reason for condemning the policy of national development, or the wisdom and integrity of those who have built the roads under that policy. Neither do I think that there exists any condition to warrant taking up a new and untried public policy, which may lead to greater difficulties than those which are now faced.

The history and standing of the Canadian Pacific Ry., and its public service as a carrier today is sufficient assurance that it does not need reorganization. The scope of its business, extending to other lands by steamships and commercial connections, and the control of many thousand miles of railways in the United States, would afford sufficient reasons, if none other existed, for dismissing the idea of its acquisition by the state. So much of the Intercolonial as is serviceable to the Canadian Pacific appears to be now used by it, either as a local connection or through trackage rights. Moreover, the two have existed separately for many years as competitors and no new reason appears why the relations of the Intercolonial and Canadian Pacific should be changed for the future, unless the people of Canada are satisfied that better results would be obtained for the territory served by the Intercolonial if it were in the hands of the Canadian Pacific.

The Grand Trunk Ry. Co. has stated that it is beyond its power to assume and carry the obligations which would be imposed upon it if it should try to become such a transcontinental system as the plans of 1903 contemplated. The company has not attempted to bring about the organization of a system approximating that of the Canadian Pacific or even the Canadian Northern, nor can it do so. In view of the parent company's inability to carry out its original plans, and to discharge its obligation, the question is, what disposition is to be made of the various roads which were intended to be, but did not become parts of one operating system. My colleagues have recommended that the stockholders of the Grand Trunk Ry. Co. be paid an annuity which is to be a "moderate but substantial portion of $3,600,000, the average dividend payment for the last ten years." This recommendation is in spite of the facts noted in the report that there are arrears in maintenance which require the expenditure of $21,000,000, and that the company has charged to capital items which should properly have been charged against income, these facts indicating that there have been some dividends paid which have not been earned. Considering this situation and also the obligation of the company in the west, I am not impressed with the justice of paying an annuity to the stockholders in exchange for a surrender of this property. I also would be liberal to them, but I would allow them to keep their property and give them a chance to work out their own salvation. To that end, I would recommend that a settlement be effected between the government and the G.T.R. Co. The railway cannot carry out its part of the contracts, and it should be relieved of further embarrassment. On the other hand, the stockholders of the G.T.R. should be required to curtail or forego their dividends for the present, and the entire earnings be applied to the rehabilitation of the road through a term of years. The government thus gives up a present claim which the debtor cannot pay anyway; in turn, it will enjoy improved and extended service which may be worth far more to the welfare of the people. I should also give the government some claim upon the future earnings of the Grand Trunk, so that it may share in any future prosperity which this action makes possible.

Reorganization of the Grand Trunk is desirable only in so far as it shall be required to put itself in shape to discharge efficiently its functions as a carrier. Whether it shall retain all of the subsidiaries which it has accumulated through the past 50 years depends in large measure on what they can contribute to the main property. Careful study of each of the subsidiaries will lead to definite conclusions from the standpoint of the Grand Trunk and its future welfare. What the Grand Trunk needs most of all is to be relieved upon equitable terms of the embarrassment that it has incurred through the failure of the transcontinental scheme. The acquisition by the state of the G.T.R. proper presents much of the embarrassment that would obtain in the effort to acquire the Canadian Pacific, for here also, in addition to the question of equity involved, there is the problem of some 2,000 miles of railway owned in the

United States; and the fact that the Grand Trunk's principal seaport is in the U.S.

The investigation of the Canadian Northern by the commission has disclosed evidence of skill in construction and efficiency in management, considering the means and equipment available. The company even now earns a large part of its fixed charges although important parts of the system have been in operation for but a year. I think there is ample justification for confidence that the affairs of the company will improve with the return of normal conditions. I see no reason for a change of management or a reorganization, excepting as hereinafter suggested.

It may be well here to consider the relation of the Intercolonial to the other roads, and the possibility of operating it in conjunction with any of them. We have shown its relation to the Canadian Pacific. The main line of the Intercolonial is about 1,000 miles, from Montreal to Halifax. It has occupied the territory for 50 years and has become adapted to it. There are apparently no operating economies available by combining it with another system that are not available to it alone. Assuming proper regulation, there appears to be no traffic interchange that could be better assured by merger. I am informed that the Maritime Provinces consider the use of the Intercolonial as a right to which they are entitled. Moreover, the government has built the Transcontinental, a part of which was in compliance with plans of the Grand Trunk, while the rest of it is so placed that it ought to continue to be operated in conjunction with the Intercolonial. The present status of the Intercolonial and the eastern part of the Transcontinental should be continued as a government operation. The results of such operation should, however, be reported to the people of Canada in exactly the same form as is required from other railways. And these roads should be subject to the same reasonable regulation as is exercised over all other railways.

Mention might be made here of the railway that the government is building from the Saskatchewan River to Hudson Bay. The object in the construction of this road has been stated to be that of obtaining a shorter haul from the western provinces to Europe. The bulk of the traffic to follow this route must necessarily be diverted from the roads extending from Winnipeg to the east, so that the project seems to be an instance of competitive construction which cannot be justified in this case, even on the ground that it opens up new territory.

There are numerous local railway projects, within provincial limits, which at the moment seem to have little effect upon this general railway problem. Disposition of these may well await developments as to their necessity and utility when they assume operation. There is little that can be said just now as to their probable relation to the existing means of transportation.

The Great Lakes and the St. Lawrence River furnish a natural route from the western country to the east, and to the Atlantic ocean for a part of the year. Numerous steamship lines between Port Arthur and Georgian Bay or the lower lakes and St. Lawrence River ports afford adequate transportation under normal conditions, though somewhat affected by customs requirements and other factors. In view of the heavy movement of grain in the last three months of navigation, regulations governing shipping should be as favorable as practicable, for the hauling of grain over the long distances to the eastern seaboard by an all rail route involves a problem in car supply and cost which renders such a haul unprofitable for rail lines. The success of the Canadian Pacific steamship lines has led to the suggestion by some that the other railways ought also to establish steamship lines. I do not believe that this success was primarily due to the railway ownership of the ships. Temporarily the war seems to have put a stop to plans for railway owned steamships. If, at the close of the war, it is to be tried again, it would seem advisable first to ascertain whether other ships cannot be induced to schedule sailings before railways incur the responsibility of making additional investment in ships. There are ships running in regular postal routes with subventions. Perhaps the government might well require, in connection with its subventions, that ships give equal service to the railways without discrimination among them, thus removing another cause for the employment of duplicate facilities.

In visiting the various ports, I was impressed with the facilities installed and being installed. At Halifax, particularly, important works were actively under way, necessitated, I believe, by the overseas traffic for war purposes. It is likely that the future development of steamship terminals in connection with railways will be difficult to fix until normal conditions resume. Meanwhile, the Atlantic seaports are so much involved in the emergencies of war as to place them beyond the scope of this inquiry. In any event, such works of harbor improvement and development as are the result of war measures will be there at the close of the war as a foundation for what the future may hold.

I am unable to join my colleagues in their recommendations. They propose that practically all of the railways in Canada, except the Canadian Pacific and the United States lines, shall be turned over to a corporation to be managed by a board of trustees appointed by government. They insist that this board is to be permanent and self perpetuating. I do not know by what means one parliament can bind its successors to a given policy, especially in so simple a matter as changing the organization of a government board. My friends seek to avoid government ownership and operation, in fact condemn it as inadvisable, but propose a plan which contains so many elements of danger in the direction which is sought to be avoided that I am unable to join them. Their plan would add about a billion dollars to the direct debt of Canada. The interest on this is about $40,000,000, adding very largely to government expenses. Judging from the experience Canada has had with its government railways, it is fair to assume that this would remain a permanent burden. Operated by private companies, this interest would ultimately be borne by the companies without recourse to the government funds, and at the same cost of service to railway patrons as would obtain under government operation.

Their plan also leaves out some of the railways. This is unfair to the investors whose property is to be subjected to government competition. It also discriminates in the method by which the respective properties are to be acquired. I cannot approve the proposed centralization of control. There are problems local to separate regions which often require prompt action and co-operation between the railways and the people served. There is a need everywhere for that prompt and efficient service which can come only from a knowledge of local conditions and responsibility for meeting them. I cannot believe that centralization, remote responsibility and control, will ensure good service to the people of Canada. The recommendation creates a Dominion Railways Co. owned by the Dominion Government, to take over those roads. There are about 7,000 miles in the United States controlled by Canadian companies. The Canadian railways depend for no inconsiderable portion of their revenue on United States traffic. A fundamental defect of the plan, therefore, is in placing the government in the railway business, not only in Canada, but also operating railways in the United States subject to both federal and state regulation.

Through private railway management, Canada has obtained about one mile of railway for each $30,000 of government aid of guarantees, which is but a fraction of the cost of government railway undertakings. In some instances, a large proportion of the aid was in land, the value of which was produced by the building of the railway and the settlement thereby made possible. Compared with the total outlay involved in producing railways by the government for itself, as, for instance, the case of the Intercolonial or the Transcontinental, from three to six times that amount have been used to realize equal results. This shows distinctly the value of enlisting and retaining private enterprise.

The Obvious Remedy.—Let us review the salient facts concerning each company: The Canadian Pacific is amply able to take care of itself. It can and does provide competition with the other railways. In order to be most serviceable to Canada, it should be continued, subject only to such equitable regulation as is accorded to all lines. The Grand Trunk succeeded in the east and failed in the west. The Canadian Northern succeeded in the west and was jeopardized by its eastern expansion. There is extensive duplication of lines in the west; the unsuccessful Grand Trunk Pacific lines are found among the successful Canadian Northern lines. Public policy demands the unification of these lines, for great economies could be thereby accomplished. There is extensive duplication in the east; the new Canadian Northern lines among the older lines of the Grand Trunk proper. Great economies in proposed investment and operating expenses await the joint working of these properties. There is wasteful duplication in the connecting region between North Bay and Winnipeg, where the Canadian Northern line parallels the government line. Economy awaits the joint working of these lines.

Consideration of all phases of the problem leads me to recommend the following remedies for the existing situation:—Let the Canadian Pacific alone; let the Grand Trunk operate the eastern lines now held by that company and the Canadian Northern; let the Canadian Northern operate the western lines now held by that company and the Grand Trunk Pacific system; let the government operate the connections or procure their operation by private companies; all of which should be done under arrangement that are equitable and yet look to the not distant day when the country will have survived the war and resumed its prosperous growth.

There may be several ways by which this can be brought about, but the one that has appealed to me is that which seems to be the least disturbing of values and credit and involves no untried

schemes or protracted disputes. Therefore, I beg to make the following suggestions:—Amend the regulating policy so that the Board of Railway Commissioners may have jurisdiction over all railways in the matter of maximum and minimum rates, the issuance of securities, the building of new railways, or the extension of lines, and other matters properly within the scope of governmental supervision. Create a board of trustees, consisting of two government officials and three private citizens, to act for the government in the matters hereinafter proposed.

Relieve the Grand Trunk Ry. Co. of its obligation to lease the Transcontinental, and require the company to relinquish all claims upon the Transcontinental; require it to lease to the board of trustees the Grand Trunk Pacific Ry. properties at a rental amounting to the net annual fixed charges; require it also to take under lease the Canadian Northern properties east of North Bay and Parry Sound, and pay as a rental the net fixed charges on those properties. The lease should be for 21 years. The Grand Trunk's investments, other than railway, in the west may be disposed of by the company as it may elect, and in accordance with its best interests.

Require the Canadian Northern Ry. Co. to confine its operation to the field west of Winnipeg. Relieve it of the line east of Winnipeg by leasing for 21 years to the governmental board of trustees, at a rental of the net annual fixed charges. Require it to take a lease of, and to operate for the same period the Grand Trunk Pacific Ry., and its branch lines, paying as rental the net annual fixed charges upon those properties; except that until seven years after the end of the war they shall have the immunity that was promised the Grand Trunk Pacific for a period of seven years after construction, and that they shall not be required to assume any of the extraneous investments of the Grand Trunk System in the west.

Lease the lines between North Bay and Winnipeg (except the Canadian Pacific's) for 21 years to either the Canadian Northern or the Grand Trunk (or, in event neither applies, to any other qualified company), requiring the lessee to furnish the necessary capital for new equipment, and to maintain and operate the lines on the best terms that can be made; terms that would give the best service needed at lowest cost to the government being regarded as best. Either the government or the lessee should build a connecting line of about 30 miles near Long Lake, Ont., to protect the better working of the two lines. The government and companies should have the option of terminating, after 10 years, any of the leases upon equitable terms.

The foregoing recommendations are made with a view to obtaining for Canada maximum of efficiency at a minimum outlay. The continuance of government aid, to some of the railways at least, will be necessary under any plan. The plan herein proposed seeks to reduce this to the lowest possible point and to centralize it upon those parts of the existing lines which are not self supporting, and which, in the nature of things, cannot be self supporting for years. These connecting links, "bridges," as they have been called, exist, it seems to me, as a result of that public policy which has been discussed at some length. The government may well afford to take them over and maintain them as necessary parts of the public investment in the country's development. They are not of sufficient importance to bring about those dangers inherent in government operation of this kind on a large scale, and holding them will not endanger private enterprise. It may be necessary in working out this plan to grant some additional and temporary aid to the Canadian Northern, and it will be necessary to effect some compromise with the Grand Trunk Ry. Co. which will enable this company to continue. Aid should be extended upon the recommendation of the board of trustees, who should be charged with the duty of investigating the need of and approving the aid to be rendered by the government; they should also see that the government receives for that aid such security as will give it a reversion in case of default.

The recommendations here submitted are to be considered as a general outline of what appears to be a fair solution of the transportation problem. Enabling legislation will be required in any case, and I realize that there are many technical and legal questions which will require careful attention at expert hands. If the general plan is adopted, my thought is that the board of trustees which I have suggested be charged with the duty of acting for the government in all matters requiring new contracts, and shall protect the interest of the government in every way while leasing, operating, or financing the property under their care to the best advantage, due consideration being given to the rights of the other parties at interest.

If for any reason it should prove inexpedient to carry out the foregoing suggestions, and if the government should find it wise or necessary to possess itself of, and to hold any considerable part of the railway properties, I should recommend as an alternative plan the formation of a private company to take over other operations of those properties, either as a whole or in groups. Even where a road does not earn its fixed charges the government could profit in the long run by making the terms of an operating lease sufficiently attractive to induce private enterprise to undertake its management. The terms of the contracts would naturally depend upon the extent of the property and the prospect of earnings, but they could be so drawn as to prove attractive to private capital and at the same time relieve the government of the expense and embarrassment of government opration. Such contracts might be based upon a profit sharing plan on a fair basis, which would leave the company a hope of reward commensurate with its efforts and give the public also a share in the prosperity which they must help to create.

I should like to add one other thought. The railways of Canada are in desperate need of equipment. Whatever decision is made with reference to the railways, the transportation problem is now acute in so far as equipment is concerned. I would, therefore, recommend that the government undertake at once to provide an ample supply of freight cars and locomotives against immediate and imperative needs. These cars and locomotives may be had, if desired, under trust agreements. It will be a simple matter to turn the cars and locomotives over to the operating companies under lease, or contract of purchase which may be exercised when conditions are more nearly normal.

Concluding, I would be loath to suggest recourse to any radical changes in the domestic policy of the Dominion of Canada in this time of war and stress. Remedial measures are often more efficacious than revolutionary ones, and more equitable. I have been impressed by the seriousness of your transportation problem, and in sincerity express my belief that the problem can be successfully and satisfactorily remedied by just and mutual recognition of difficulties and full and free co-operation between the government and the railways. Fair and broad treatment of the question will, I am convinced, bring capital and personal genius commensurate with the exigencies of the present situation, and capable of developing a happy solution. I believe that the best results hitherto have been obtained by the efficiency and economy of private initiative, energy, and capital. It is no longer assumed that the self interest of the railway investor and operator is antagonistic to the interest of the public; rather, we have all learned, governments and corporations like, that the two are inseparately linked and must stand or fall together. Upon these fundamental truths I base my firm conviction that the brightest outlook for the future of your great Dominion can be assured through the extension of private railway enterprises. The hope of honor and the reward of public approval must be open to human kind to get the best results from human endeavor.

Facing the urgency of the need, considering the part which the government has taken and the responsibility which it shares, and keenly alive to the magnitude and the importance of the tasks now placed upon the railways and the greater tasks which they will face, I see no safe alternative but that the government shall continue, with discrimination and resort to all available safeguards, and under a policy of proper regulation and co-operation of effort, to aid the necessitous railways of the Dominion until such time, which I hope and believe will not be far distant, when these will become self supporting and the problem will be solved.

President Chamberlin Questions Statements Respecting G.T.R.

E. J. Chamberlin, President G.T.R. and G.T. Pacific Ry., made the following statement May 6: "I have read the majority report of Sir Henry Drayton and W. M. Acworth, who with A. H. Smith, President, New York Central Rd., were appointed a commission to examine the Canadian railway situation. I have not, however, seen the report of Mr. Smith dissenting from the views of the other commissioners. I am extremely surprised at some of the statements made in the report with regard to the position of the G.T.R. Co., of Canada, which, with all respect to the commissioners signing the majority report, I am compelled to say are inaccurate and misleading. So far as that company is concerned its credit at the present time is high, and its financial position not at all as stated in the report.

"During the past five years the G. T. has borrowed in New York for capital purposes over $15,000,000, and had it not been for the war, which created abnormal conditions, further capital would have been procured and expended if prices had been satisfactory and deliveries could have been obtained. In view of statements contained in the report, and calculated to impair this credit of the company, I think it only just to the holders of G. T. securities that they should be assured of the absolute safety of their investment. At a later date a full statement with regard to the company's position will be made."

Steam Railway Statistics for Year Ended June 30, 1916.

In the following table the column headed gross earnings includes passenger and freight earnings, as well as miscellaneous earnings; the latter not being shown separately; the next four columns give the operating expenses classified under their various headings, while the last gives the net earnings, which are arrived at by deducting the totals of the four columns referred to from the figures in the gross earnings column. The minus (—) mark before figures in the net columns shows that there was a deficit in the operations of the line to the extent of the figures given. The cents have been omitted in all cases, and the figures in the totals show the aggregate earnings, etc., including the cents, omitted from the detailed items.

Name of railway	Mileage	Passenger earnings	Freight earnings	Gross earnings	Maintenance of way and structures	Maintenance of equipment	Traffic and transportation expenses, etc.	General expenses	Net earnings
Algoma Central & Hudson Bay	347.71	$ 50,745	$ 550,119	$ 739,270	$ 190,924	$ 95,448	$ 234,779	$ 56,696	$ 164,441
Algoma Eastern	88.77	51,055	413,056	528,005	52,124	56,313	132,115	15,345	280,184
Atlantic,Quebec & Western	103.08	32,100	69,206	102,675	32,590	19,313	54,849	13,157	—17,147
Bedlington and Nelson	12.04	.....	.....	.....	.....	.....	.....	.....	.....
Brandon, Sask. & Hudson Bay	69.45	21,576	24,114	51,159	69,781	8,909	46,184	4,026	—77,742
British Yukon	101.12	41,683	219,927	270,104	30,519	9,175	46,324	18,112	165,971
Canada Southern	380.54	2,915,909	7,842,339	11,422,272	1,244,547	1,287,770	3,602,567	280,286	5,007,099
Canada & Gulf Terminal	35.80	16,655	29,084	49,328	7,819	2,345	22,679	7,332	9,151
Canadian Government									
Intercolonial	1,514.10	4,000,595	10,120,807	15,686,661	2,429,871	2,411,272	8,170,307	311,731	2,363,478
National Transconti'al	2,002.09	619,954	5,030,411	5,798,516	1,547,238	960,205	2,776,212	85,405	429,454
Prince Edward Island	274.60	175,879	181,640	436,728	149,564	77,171	331,981	16,597	—138,786
Canadian Northern	9,647.23	5,454,755	26,500,937	35,476,275	5,899,540	4,090,198	14,166,532	1,087,921	10,232,088
Canadian Pacific	12,899.70	24,407,144	89,072,485	124,654,570	14,671,791	16,695,955	44,543,891	2,326,188	46,416,743
Cape Breton	31.00	6,122	8,288	15,099	6,334	1,505	10,905	3,225	—6,871
Caraquet	84.78	22,896	53,004	81,218	20,756	7,972	39,451	7,313	5,724
Central Vermont	125.20	118,487	195,973	341,672	84,802	25,130	138,049	7,785	85,902
Crow's Nest Southern	74.18	9,182	100,318	112,641	71,476	24,851	66,356	6,435	—56,478
Cumberland Ry.& Coal	32.00	14,708	67,793	87,454	22,539	8,787	41,674	3,255	11,196
Detroit River Tunnel	1.45	.....	.....	.....	.....	.....	.....	.....	.....
Dominion Atlantic	274.16	373,543	508,251	962,066	195,141	75,795	375,769	38,596	276,763
Eastern British Columbia	14.00	1,384	28,465	31,338	11,932	3,843	15,139	1,643	—1,220
Edmonton, Dunvegan & B.C.	287.00	152,380	259,654	427,413	72,208	32,078	212,807	16,161	94,157
Elgin & Havelock	27.00	2,801	7,138	10,997	5,277	46	4,977	399	297
Esquimalt & Nanaimo	199.20	172,028	308,761	529,913	93,869	68,229	187,086	9,616	171,111
Essex Terminal	10.00	.....	70,678	84,310	20,604	2,410	21,390	11,415	28,453
Fredericton & Grand Lake Coal & Railway Co	35.00	6,786	61,561	69,807	10,032	3,894	28,157	3,448	24,274
Grand Trunk	3,555.85	10,261,959	25,317,784	39,155,040	4,447,664	6,161,593	16,676,872	1,495,872	10,373,027
Grand Trunk Pacific	1,963.91	1,029,880	4,959,373	6,963,188	1,557,939	1,264,007	2,748,942	331,953	1,060,345
Hereford	52.18	16,913	75,973	97,063	36,793	14,979	51,035	3,635	—9,379
International of N.B.	111.30	39,140	74,420	116,227	59,103	11,400	46,309	2,616	—3,204
Inverness Ry. & Coal Co	60.91	.....	.....	.....	.....	.....	.....	.....	.....
Kent Northern	27.00	.....	.....	.....	.....	.....	.....	.....	.....
Kettle Valley	302.92	44,621	272,000	330,426	165,300	28,880	126,170	8,901	1,172
Klondike Mines	31.81	.....	.....	.....	.....	.....	.....	.....	.....
Lotbiniere & Megantic	30.00	5,648	28,558	36,073	9,667	4,611	9,917	5,364	6,512
Magnetawan River	1.91	.....	.....	.....	.....	.....	.....	.....	.....
Maine Central (Princ. Br.)	5.10	10,640	6,585	18,362	2,379	2,168	9,253	787	3,773
Manitoba Great Northern	91.77	5,803	31,415	38,087	66,842	7,918	36,218	3,709	—76,602
Maritime Coal,Ry.& Power	15.00	6,742	82,303	90,341	15,544	11,028	24,840	2,166	36,762
Massawippi Valley	35.46	64,676	153,127	224,520	48,989	34,643	114,753	10,010	16,121
Montreal & Atlantic	184.40	179,222	1,050,371	1,291,419	200,624	171,885	542,184	21,196	31,161
Moncton & Buctouche	32.00	12,868	18,963	34,663	9,434	3,079	14,579	4,414	3,136
Morrissey, Fernie and Michel	10.85	11,388	108,823	120,589	13,273	12,648	42,308	21,196	31,161
Midland of Manitoba	6.40	87,839	121,639	266,305	47,084	37,302	206,110	13,171	—37,364
Napierville Junction	27.06	11,304	117,480	129,417	13,260	5,839	37,531	1,844	70,941
Nelson & Fort Sheppard	55.42	16,037	21,273	42,909	38,520	8,746	37,105	4,466	—45,929
New Brunswick Coal & Ry Co	58.00	11,548	31,300	44,949	21,448	7,807	12,959	2,433	299
New Brunswick & P.E.I.	36.05	7,742	32,961	42,624	33,001	4,650	24,633	591	—20,252
New Westminster Southern	15.18	3,138	26,730	35,203	9,554	3,263	13,397	2,241	6,745
North Shore	8.63	.....	.....	.....	.....	.....	.....	.....	.....
Northern N.B. & Seaboard	19.80	.....	.....	.....	.....	.....	.....	.....	.....
Nosbonsing & Nipissing	5.50	.....	.....	.....	.....	.....	.....	.....	.....
Ottawa & New York	56.90	78,247	151,529	250,237	81,625	37,196	154,988	9,010	—32,582
Pere Marquette	198.81	133,198	2,796,837	2,987,102	334,729	212,524	963,192	76,481	1,400,404
Phillipsburg Ry. & Quarry Co	6.00	.....	.....	.....	.....	.....	.....	.....	.....
Quebec Central	277.00	378,364	1,043,107	1,506,348	209,706	170,772	567,030	48,071	510,766
Quebec Oriental	100.00	45,204	86,251	138,688	47,317	15,975	52,017	14,298	9,080
Quebec Ry., Light & Power Co	30.82	8,060	79,199	87,476	9,311	15,184	34,692	7,934	20,352
Quebec, Montreal & Southern	192.18	137,711	227,455	383,653	114,007	179,376	160,030	17,655	—87,486
Red Mountain	9.59	2,191	10,545	14,596	8,244	2,602	14,233	1,188	—12,672
Rutland & Noyan	3.39	8,723	5,936	14,956	3,659	2,170	5,527	704	2,894
Roberval-Saguenay	36.80	8,836	99,845	160,032	17,471	14,645	50,981	11,034	65,900
Salisbury & Albert	45.00	9,249	27,761	32,076	14,346	2,241	13,374	3,020	9,093
St. Lawrence & Adirondack	46.12	201,228	505,825	743,192	86,442	42,149	283,261	12,478	318,859
St. Martins	30.00	4,112	15,831	21,506	8,581	3,348	7,593	1,065	918
Sydney & Louisburg	70.27	51,398	747,862	821,385	116,138	194,563	294,910	25,659	190,113
St. John & Quebec	119.87	28,431	40,389	69,846	33,538	6,539	46,585	3,892	—20,709
St. Clair Tunnel	1.23	.....	.....	.....	.....	.....	.....	.....	.....
Temiscouata	113.00	50,250	159,759	222,778	49,988	30,446	79,894	15,932	48,516
Timiskaming & North Ont.	328.50	555,017	1,277,440	1,992,372	364,541	228,846	861,304	77,311	462,351
Thousand Islands	6.33	8,832	21,279	38,001	5,664	777	16,787	3,469	11,303
Toronto, Hamilton and Buffalo	95.05	392,881	1,172,123	1,649,512	185,058	218,309	527,472	57,690	660,981
Vancouver, Victoria and Eastern	224.12	104,499	372,867	540,127	267,475	71,337	346,793	26,045	—171,723
Victoria and Sidney	15.79	16,345	12,236	31,934	5,332	1,106	17,931	2,904	4,660
Victoria Terminal Ry and Ferry	.99	1,307	888	2,517	375	70	1,142	187	742
Wabash (1)	..	377,189	2,692,766	3,118,318	339,208	607,037	1,359,752	89,144	723,174
York and Carleton	10.50	1,865	2,928	4,987	1,356	176	2,302	....	1,152
Total	37,434.05	$53,097,612	$185,806,167	$261,888,653	$36,040,945	$35,822,484	$101,907,588	$6,781,574	$81,346,394

(1) The Wabash Ry., while operating in Canada, does not own any railway in the country, but runs over the G.T.R. from Windsor to the Niagara River, under a lease. It does both a through and local business in Canada, the officials and agents acting jointly for the G.T.R. and Wabash Ry.

Error in Steam Railway Statistics.

In the table of steam railway statistics on the preceding page, the total mileage in Canada at June 30, 1916, is shown as 57,434.05 miles, instead of 37,434.05 miles, the latter being the correct figures.

Passenger Train Service Ordered by Board of Railway Commissioners.

The Great Northern Ry., having applied for an order relieving it from maintaining a train service from Cloverdale North to Port Kells, B.C., and thence west to the bridge over the Fraser River, as required by order 9342, Jan. 18, 1910, as amended by order 12312, Sept. 5, 1910, the case was heard at Vancouver, June 26, 1916. The Board of Railway Commissioners gave judgment April 26, 1917, as follows: That the said orders, in so far as they direct the Great Northern Ry. to establish a train service on its Vancouver, Victoria and Eastern, and New Westminster and Southern Railways from Cloverdale North to Port Kells and from Port Kells to the Fraser River bridge at New Westminster, be rescinded, and the company is granted leave to establish a new time table covering the lines: from Sumas via Abbotsford and Cloverdale to Vancouver; from Guichon via Cloverdale to New Westminster; and from Haselmere to Abbotsford, upon the condition that the permission granted is without prejudice to the company being required, should conditions justify it, to serve the district between Cloverdale and Port Kells Jct.

Grand Trunk Ry.—On the application of the Aylmer, Ont., Board of Trade, for an order directing the G.T.R. to serve the territory between Tilsonburg Jct. and St. Thomas with its Tilsonburg Subdivision trains 263 and 268. The board ordered, May 2, that the G.T.R. be directed to extend the train now running from Brantford to Tilsonburg, arriving at Tilsonburg at 6.50 p.m. through to St. Thomas, return to Tilsonburg Jct., and there connect with the train from Hamilton, as at present arranged; the train service to be shown in the new summer time table and continued for three months as a trial service.

Victoria Jubilee Bridge Tolls.—The South Shore Board of Trade at a meeting held in St. Lambert, Que., May 2, arranged to hold a public meeting at an early date to decide what action should be taken to have the tolls on Victoria Bridge abolished. A return submitted to the House of Commons, May 1, shows that a new tariff had been agreed upon April 7, as follows: Eight tickets for foot passengers for 25c, instead of 6 tickets; a 15c rate for motor cycles; a 25c rate for automobiles, and the issue of tickets at the rate of 10 for $2, 20 for $3, good for one month, and 50 for $5, good for three months. For motor trucks, the rates agreed upon were 40c for those of two tons and under, 60c for those between two tons and four tons, and 90c for all over four tons.

Safety First Pictures.—The Canadian Government Railways has converted the official car, Yamachiche, into a moving picture theatre, for giving safety first demonstrations to its employes. Demonstrations have already been given at New Glasgow, Stellarton, Pictou, Sydney, North Sydney, Truro, Halifax, N.S., St. John and Moncton, N.B.

Birthdays of Transportation Men in June.

Many happy returns of the day to:

Jas. Anderson, Manager, Sandwich, Windsor & Amherstburg Ry., Windsor, Ont., born at Ayr., Ont., June 20, 1851.

F. F. Backus, General Manager, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., born at Rochester, N.Y., June 4, 1860.

W. C. Bowles, General Freight Agent, Western Lines, C.P.R., Winnipeg, born at Montreal, June 3, 1875.

J. H. Boyle, Superintendent, Farnham, Division, Quebec District, C.P.R., Farnham, born at Waterloo, Que., June 26, 1869.

F. P. Brady, General Manager, Lines from Quebec Bridge westerly, Canadian Government Railways, Cochrane, Ont., born at Haverhill, N.H., June 22, 1853.

H. W. Brodie, General Passenger Agent, Lines West of Revelstoke, C.P.R., Vancouver, B.C., born at Fredericton, N.B., June 8, 1874.

G. W. Coburn, Resident Engineer, C.P.R., Brandon, Man., born at Upper Melbourne, Que., June 24, 1877.

E. P. Coleman, General Manager, Dominion Power & Transmission Co., Ltd., Hamilton, Ont., and President, Canadian Electric Railway Association, born at Taunton, Mass., June 14, 1867.

W. S. Cookson, General Passenger Agent, G.T.R., Montreal, born at Port Jervis, N.Y., June 12, 1871.

E. L. Cousins, Manager and Chief Engineer, Toronto Harbor Commission, Toronto, born there, June 11, 1883.

A. Craig, City Passenger Agent, C.P.R., Hamilton, Ont., born there, June 5, 1884.

A. E. Doucet, M.Can.Soc.C.E., Quebec, ex-District Engineer, National Transcontinental Ry., Quebec, born at Montreal, June 9, 1860.

E. W. DuVal, formerly Superintendent, Saskatoon Division, Saskatchewan District, C.P.R., Saskatoon, now on active military service, born at Toledo, Ohio, June 5, 1885.

Knowlson Elliott, City Freight Agent, C.P.R., Calgary, Alta., born at Gorrie, Ont., June 26, 1884.

J. M. R. Fairbairn, M.Can.Soc.C.E., Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal, born at Peterborough, Ont., June 30, 1873.

W. E. Foster, Solicitor for Ontario, G.T.R., Montreal, born at Belleville, Ont., June 27, 1866.

A. A. Goodchild, General Storekeeper, Eastern Lines C.P.R., Montreal, born at Peckham, London, Eng., June 3, 1866.

H. W. Harding, Local Secretary, Canadian Northern Ry., London, Eng., born there, June 6. 1869.

Hon. J. D. Hazen, M.P., Minister of Marine, Ottawa, born at Oromocto, N.B., June 6, 1860.

L. K. Jones, I.S.O., Assistant Deputy Minister, Department of Railways and Canals, Ottawa, born at Port Hope, Ont., June 9, 1849.

A. C. Lytle, Assistant Superintendent of Construction, Montreal Tramways Co., Montreal, born at Hemmingford, Que., June 6, 1854.

J. D. McAuley, Commercial Agent, Grand Trunk Pacific Ry., and Grand Trunk Pacific Coast Steamship Co., Ltd., Prince Rupert, B.C., born at Plantaganet, Ont., June 11, 1884.

R. S. McCormick, M.Am.Soc.C.E., Chief Engineer and General Superintendent Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont., born at Quaker City, Ohio, June 22, 1873.

Duncan McDonald, ex-General Manager, Montreal Tramways Co., born at St. Thomas de Montmagny, Que., June 17, 1859.

S. J. McLean, Dominion Railway Commissioner, Ottawa, born at Quebec, June 14, 1871.

C. E. McPherson, Assistant Passenger Traffic Manager, Western Lines, C.P.R., Winnipeg, born at Chatham, Ont., June 7, 1861.

W. R. MacInnes, Freight Traffic Manager, C.P.R., Montreal, born at Hamilton, Ont., June 7, 1867.

J. R. C. Macredie, M.Can.Soc.C.E., Engineer, Saskatchewan District, C.P.R., Moose Jaw, born at St. John, N.B., June 13, 1880.

G. Manson, Assistant to the Vice President, C.P.R., Montreal, born at Thurso, Scotland, June 8, 1863.

J. D. Morton, Assistant Comptroller, Canadian Northern Ry., Toronto, born at London, Ont., June 15, 1857.

L. Mulkern, Division Freight Agent, C.P.R., St. John, N.B., born at London, Ont., June 18, 1871.

J. E. Pinault, General Superintendent, Canada & Gulf Terminal Ry., Mont Joli, Que., born at Rimouski, Que., June 24, 1884.

F. R. Porter, Assistant General Freight Agent, Grand Trunk Pacific Ry., Winnipeg, born at Stratford, Ont., June 13, 1875.

W. G. Powell, Freight and Passenger Agent, Grand Trunk Pacific Ry., Skagway, Alaska, born at Galt, Ont., June 27, 1891.

F. Price, Superintendent of Car Service, G.T.R., Montreal, born there, June 11, 1864.

Allan Purvis, General Superintendent, Quebec District, C.P.R., Montreal, born at Batavia, Java, June 29, 1878.

J. L. Reycraft, Solicitor, Manitoba and Saskatchewan Districts, C.P.R., Winnipeg, born in Orford Tp., Kent County, Ont., June 20, 1868.

L. G. Rogers, Yardmaster, C.P.R., Trenton, Ont., born at Richford, Vt., June 18, 1874.

J. R. Shaw, General Agent, Passenger Department, Canadian Pacific Ocean Services Ltd., Shanghai, China, born at Montreal, June 28, 1871.

J. L. Simpson, agent, C.P.R., Port McNicoll, Ont., born at Mount Forest, Ont., June 9, 1866.

H. H. Smith, Car Accountant, Canadian Northern Ry., Toronto, born at Quebec, Que., June 14, 1872.

N. Van Wyck, Freight Claims Agent, Canada Steamship Lines, Ltd., Montreal, born at Hamilton, Ont., June 29, 1883.

V. G. R. Vickers, Manager, Foreign Department, and Superintendent, Atlantic Division, Dominion Express Co., Montreal, born at Toronto, June 1, 1866.

Walter White, Trainmaster, G.T.R., Palmerston, Ont., born at Toronto, June 4, 1866.

Foot Boards for Yard Locomotives, etc.—The question having been raised as to whether a road locomotive used in joint yard and transfer service should be equipped with foot boards, as outlined in the Board of Railway Commissioners' general order 102, the board has given notice that all locomotives used in yard, joint yard and transfer service must be equipped with foot boards, as prescribed for steam locomotives used in switching service.

Railway Finance, Meetings, Etc.

Algoma Central Terminals, Ltd.—In accordance with the arrangement made some little time ago, holders of the company's 5% first mortgage 50 year gold bonds are required to forward their bonds with all unpaid coupons attached to the Bank of Montreal, London, Eng. A payment of interest at 3% per annum is to be made for the year ended Aug. 1, 1915.

The Canadian Northern Ry. Co. announces that the earning for the half year ended Dec. 31, 1916, were insufficient to enable it to pay any interest on the 5 income charge convertible debenture stock on May 2.

Lacombe & Blindman Valley Electric Ry.—The Merchants Bank of Canada is receiving at its Toronto office, to June 14, tenders for the purchase of $547,000 of 5% 20 year gold bonds of the L. & B.V.R., guaranteed as to principal and interest by the Alberta Government.

Timiskaming & Northern Ontario Ry.—Passenger earnings for March, $47,-554.51; freight earnings, $127,641.23; total earnings, $175,195.74; against $49,-666.24, passenger earnings; $165,262.27, freight earnings; $214,928.51, total earnings, for Mar., 1916.

White Pass & Yukon Route.—Gross earnings from Jan. 1 to Mar. 14, $54,887, against $36,530 for same period, 1916.

Forest Fires Along Railways.—During 1916, there were reported 558 fires as originating in forest sections. within 330 ft. of railway tracks, under the Board of Railway Commissioners' jurisdiction. This was 128 less than reported in 1915. Of the total for 1916, 69% were attributed to railway causes, 18% to known causes other than railways, and 13% to unknown causes. Of the 388 fires attributed to railways, 101 were incipient fires and did no damage; 287 were larger fires which burned over 11,290 acres valued at $35,-556. The total damages from fires are estimated at $39,482, of which railways are charged with 90%. This is stated to be a remarkably good showing, considering the unfavorable weather conditions. Of the total fires, 61 were attributed to locomotives and 8% to railway employes. The use of tank cars for fire fighting purposes by the C.P.R., Grand Trunk, Timiskaming & Northern Ontario and Canadian Government Railways, has proved effective in many cases.

The June Mechanical Conventions.—The annual conventions of the American Railway Master Mechanics' Association, and the Master Car Builders' Association, announced to be held at Atlantic City, N.J., June 13 to 20, will not be held this year. A joint meeting of the executive committees of the two associations was held at Chicago, Ill., April 30, when the general opinion was expressed that during the war emergency, it was imperative for all railway employes to remain at their posts ready to give their best services to their roads and the government. A number of the other railway associations have followed the lead given by the foregoing two associations, and have cancelled, or indefinitely postponed, their annual conventions for the present. Among those of which we have been advised are the Association of Transportation and Car Accounting Officers, and the Railway Storekeepers' Association.

The Canadian Society of Civil Engineers' council has approved of the change of name of the Regina branch, to Saskatchewan branch.

Canadian Pacific Ry. Honor Roll Nos. 21 and 22.

Adair, James	Carpenter	West Toronto	Wounded
Anderson, Henry	Clerk	Montreal	Wounded
Andrews, Frederick	Checker	Toronto	Wounded
Bain, William Wilson	Clerk	Montreal	Wounded
Beer, Harold Evans	Clerk	Toronto	Wounded
Bibby, Fred.	Checker	North Bay	Believed killed
Black, Edward Charles	Fitter's helper	Winnipeg	Wounded
Blennerhassett, A. J.	Trainman	Fort William	Killed in action.
Borley, John William	Locomotive fireman	British Columbia Dist.	Wounded
Boyd, James Ira	Wiper	Fort William	Wounded
Brown, John	Clerk	Calgary	Killed in action.
Buck, Sidney C. B.	Carpenter	Winnipeg	Wounded
Bunker, Cecil Elbridge	Fitter's helper	McAdam	Wounded
Causton, Charles	Truck repairer	Ogden	Wounded
Chalmers, James	Carpenter	Ogden	Wounded
Clark, Walter Blackie	Clerk	Winnipeg	Killed in action.
Collett, George	Fitter's helper	Lambton	Wounded
Coutts, James Russell	Operator	Goderich	Wounded
Crowther, Frank	Fitter's helper	Winnipeg	Wounded
Cummins, Herbert	Apprentice	Ogden	Wounded
Dann, Joseph	Conductor	Fort William	Wounded
Daw, Norman	Apprentice	Winnipeg	Wounded
Devane, Guilford	Upholsterer	Field	Wounded
Douglas, James H	Lineman	Minnedosa	Believed killed
Drummond, John J.	Porter	Fort William	Wounded
Easton, John	Trainman	Winnipeg	Wounded
Edwards, George	Wiper	Lethbridge	Wounded
Evans, David John	Floorman	Edmonton	Wounded
Faught, Thomas	Operator	Mattawa	Wounded
Foster, Edwin A.	Helper	Ogden	Wounded
Fryer, William John	Clerk	Fort William	Wounded
Gay, Aubrey H.	Locomotive man.	Calgary	Killed in action
Goodship, Lawrence A.	Wiper	Golden	Wounded
Greenless, Malcolm	Assistant cashier	Vancouver	Wounded
Harris, Benjamin G.	Clerk	Souris	Wounded
Harvey, William	Craneman	Winnipeg	Killed in action
Hayes, Stewart F.	Chainman	Kipawa	Presumed dead
Hind, Thomas	Car repairer	Ogden	Wounded
Holmes, William	Fitter	McAdam Jct.	Wounded
Humphreys, Richard	Car wheel borer	Vancouver	Wounded
Ivory, Arthur	Locomotive fireman	Winnipeg	Wounded
James, Percival Clyde	Porter	Almonte	Wounded
Johnston, Thomas A.	Clerk	Vancouver	Wounded
Kain, Charles	Helper	Winnipeg	Wounded and prisoner
Kent, Edmund Henry	Stenographer	Montreal	Wounded
Kipling, Charles	Locomotive fireman	Moose Jaw	Wounded
Laidlaw, William	Porter	Smiths Falls	Wounded
Lane, William G.	Clerk	Calgary	Wounded
Lewis, Samuel John	Locomotive fireman	Moose Jaw	Killed in action
Loveridge, Albert	Watchman	Lyleton	Wounded
Lunan, Kenneth S.	Trainman	Schreiber	Wounded
McDonald, Alister K. H.	Brakeman	Vancouver	Wounded
McGarry, Withy Paul	Brakeman	Victoria	Wounded and missing
McGibbon, James Roy	Operator	Weyburn	Wounded
McGilchrist, William	Apprentice	West Toronto	Wounded
McKay, Angus	Clerk	Fort William	Wounded
McKenzie, Elmer J.	Chauffeur	Lethbridge	Died of wounds
McLaughlin, John	Clerk	Moose Jaw	Presumed dead
Mahaffy, William	Helper	Angus	Believed killed
March, William	Locomotive fireman	Medicine Hat	Killed in action
Miller, Cecil Everett	Yardman	McAdam Jct.	Wounded
Miller, Robert	Trapper	Lethbridge	Killed in action
Milligan, Archibald	Boilermaker	Ogden	Wounded
More, James	Leverman	Winnipeg	Wounded
Morris, Thomas J.	Specialist	Angus	Wounded
Mulhearn, William E.	Fitter	Winnipeg	Wounded
Murray, Edward J.	Car repairer	Ogden	Wounded
Niven, Gilbert	Stationary fireman	Windsor	Wounded
Nixon, Frank Stroner	Clerk	Vancouver	Wounded
Old, Harvey George	Car cleaner	Winnipeg	Died of wounds
Oliver, Thomas Edward	Wiper	MacLeod	Killed in action
Parker, Sidney Herbert	Car repairer	Toronto	Wounded
Parsons, Frank	Apprentice	Winnipeg	Wounded
Paxton, Ernest F.	Clerk	Calgary	Wounded
Pearson, Sydney	Clerk	Montreal	Wounded
Peterson, John James	Trainman	British Columbia Dist.	Wounded
Pitt, Alfred	Wiper	Sutherland	Wounded
Powles, Charles M.	Apprentice	Winnipeg	Wounded
Price, Frederick	Yardman	Montreal	Shell shock
Proven, William	Carpenter	Calgary	Died of wounds
Ratcliffe, Joseph	Machinist	Angus	Died of wounds
Robertson, Andrew M.	Apprentice	Angus	Wounded
Rogers, Claude P.	Clerk	Angus	Wounded
Rowe, Henry Thomas	Porter	Port McNicoll	Died of wounds
St. Jean, Ambrose	Caller	Schreiber	Killed in action
Scott, Fred.	Cleaner	Winnipeg	Wounded
Sharman, George T.	Tuber	Ogden	Wounded
Shorrock, Richard	Yardman	Montreal	Killed in action
Slater, John Henry	Locomotive fireman	Alberta Dist.	Wounded
Smith, Alexander	Section foreman	Strathcona	Wounded
Stevenson, Alan C.	Operator	Montreal	Wounded
Strang, Robert	Clerk	Fort William	Wounded
Taylor, Albion Lynn	Wireman	Angus	Wounded
Thomas, Herbert Henry	Car foreman	Schreiber	Wounded
Tracy, John Marius	Assistant agent	Ou'Appelle	Died of wounds
Waldock, Leonard	Clerk	Toronto	Wounded
Wallace, Henry Elliott	Switchman	Glen Yard	Wounded
Weston, Henry Fulham	Fitter's helper	Smiths Falls	Wounded
Whitefield, John	Night watchman	Lethbridge	Killed in action
Wilding, Alfred John	Locomotive fireman	Kenora	Wounded
Williams, Hugh C.	Transitman	Montreal	Wounded
Wilson, Walter	Storeman	Montreal	Wounded
Wray, Joseph	Locomotive fireman	Brandon	Wounded

Atkinson, James M.	Trainman	British Columbia Dist.	Wounded and missing
Bavester, Frank	Helper	Medicine Hat	Wounded
Berry, Chas.	Cleaner	Winnipeg	Wounded
Bissonnette, Albert	Yardman	Hochelaga	Died of wounds
Blackwell, William	Storeman	Winnipeg	Wounded
Bottomley, William	Helper	Winnipeg	Killed in action
Boyd, James	Wiper	Kamloops	Wounded
Broom, Roy	Assistant agent	Kisbey	Wounded

Buchan, William	Clerk	Montreal	Wounded
Bull, Charles Humphrey	Boilermaker	Angus	Wounded
Calvert, Thomas	Locomotive fireman	Calgary	Killed in action
Campbell, Pius Joseph	Inspector	Calgary	Died of wounds
Carter, David	Car repairer	West Toronto	Killed in action
Chandler, William	Cleaner	Toronto	Wounded
Chittenden, Alfred	Helper	Winnipeg	Wounded
Clementson, John F	Clerk	Winnipeg	Presumed dead
Cope, James	Cook	Montreal	Wounded
Crooks, William David	Waiter	Montreal	Killed in action
Culling, Frederick G	Waiter	B.C. Coast S.S. Service	Died of wounds
Davidson, James	Apprentice	Winnipeg	Wounded
Davis, Albert St. Alban	Apprentice	Angus	Wounded
DeMill, Frank	Clerk	Winnipeg	Wounded
Depledge, John	Constable	Montreal	Wounded
Dion, Joseph Alphonse	Brakeman	Manitoba Dist.	Wounded
Duncan, James Riffuth	Conductor	British Columbia Dist.	Wounded
Dunn, Joseph	Helper	Winnipeg	Presumed dead
Eades, Robert	Constable	Montreal	Wounded
Edmondson, Isaac	Locomotive fireman	Kenora	Wounded
Ellacott, James L.	Clerk	Winnipeg	Believed killed
Everest, Edwin F.	Baggage man	Yorkton	Wounded
Ferguson, Leonard C.	Trainman	British Columbia Dst.	Wounded
Frank, Charles F.	Clerk	Lacombe	Wounded
Gatehouse, Arnold	Storeman	Winnipeg	Died of wounds
George, Leo Bernard	Apprentice	Vancouver	Wounded
George, Stanley W.	Timekeeper	Kootenay Central Ry.	Wounded
Grant, Edward J.	Locomotive fireman	Winnipeg	Wounded
Hall, George	Car cleaner	Winnipeg	Wounded
Hancock, William	Helper	Winnipeg	Killed in action
Hardwicke, John T.	Fitter	Winnipeg	Wounded
Harvey, Bernard N.	Timekeeper	North Bay	Killed in action
Hayward, Harry	Locomotive fireman	Winnipeg	Wounded
Heatley, Alexander	Waiter	Montreal	Wounded
Hillier, Frank	Car repairer	Victoria	Wounded
Hourd, Albert Paget	Clerk	Winnipeg	Wounded
Howie, Samuel Currie	Clerk	Vancouver	Wounded
Hutchinson, James W.	Stenographer	Montreal	Killed in action
Irlam, Thomas	Lamp and heaterman	Winnipeg	Wounded
Jessiman, George J.	Clerk	Winnipeg	Killed in action
Jones, John	Waiter	Montreal	Wounded
Knox, William S.	Carpenter	Moose Jaw	Wounded
Lane, Albert Edward	Clerk	Brandon	Wounded
Lord, Arthur	Clerk	Vancouver	Wounded
Ludeman, Fred.	Cleaner	Winnipeg	Gassed and dead
McDonald, Archibald	Cleaner	Lambton	Wounded
McDonald, Walter A.	Clerk	McAdam Junction	Wounded
McKay, Alexander	Brakeman	Calgary	Killed in action
Mackenzie, Donald	Clerk	Vancouver	Wounded
McKillop, Donald	Conductor	Cranbrook	Wounded
McLeod, John A.	Miner	Calgary	Wounded
McNair, J.	Checker	Toronto	Wounded
McNicol, James	Clerk	Galt	Killed in action
Mason, Walter John	Clerk	Vancouver	Wounded
Menard, Noel Arthur	Head bellman	Victoria	Wounded
Miller, Joseph	Miner	Lethbridge	Wounded
Millican, William	Locomotive fireman	Fort William	Wounded
Morris, John	Wiper	Moose Jaw	Wounded
Morris, Mark	Wiper	est Calgary	Killed in action
Mottley, John A.	Locomotive fireman	British Columbia Dist.	Wounded
Murdock, William H.	Brakeman	Moose Jaw	Killed in action
Nicolson, Murdoch	Clerk	Kenora	Gassed
Park, Leslie	Brakeman	Smiths Falls	Died of wounds
Parkinson, Edward R. B	Clerk	Vancouver	Wounded
Parsons, Edward James	Locomotive fireman	Smiths Falls	Wounded
Pearson, George C.	Helper	Winnipeg	Killed in action
Pegg, Henry	Constable	Montreal	Gassed
Pippard, Frederick G.	Locomotive fireman	Smiths Falls	Wounded
Pitts, Walter G.	Stripper	West Toronto	Wounded
Plater, Ernest	Apprentice	Angus	Wounded
Prizeman, George A.	Cashier	Shaunavon	Wounded and missing
Rickards, George T.	Locomotive fireman	Fort William	Killed in action
Robinson, Hugh Miller	Locomotive man	Cranbrook	Killed in action
Rosby, Asa Foster	Apprentice	Ogden	Shell shock
Russell, John Joseph	Waiter	Montreal	Wounded
Sands, Thomas Henry	Locomotive man	Regina	Wounded
Savage, Charles Henry	Timekeeper	Farnham	Wounded
Scott, Dave	Yardman	Calgary	Wounded
Scott, John Stewart	Clerk	Montreal	Wounded
Small, William Wallace	Locomotive fireman	Winnipeg	Killed in action
Smythe, John William	Waiter	B.C. Coast S.S. Service	Presumed dead
Starkey, Cecil Stanley	Section man	Parry Sound	Presumed dead
Stockdale, William J.	Conductor	North Bay	Wounded
Sykes, Norris	Foreman	British Columbia Dist.	Wounded
Thompson, Henry	Porter	Lethbridge	Wounded
Toole, Henry	Caller	Winnipeg	Wounded
Turnbull, Percy	Lampman	Lethbridge	Wounded
Wansbrough, Basil C.	Stenographer	Toronto	Wounded
Ward, Cyril	Car repairer	Ogden	Killed in action
Welch, Maurice	Carpenter	West Toronto	Wounded
Whyte, William D.	Baggage master	Banff	Wounded
Wilkin, Francis A.	Surveyor	Winnipeg	Wounded
Wilson, Willard N.	Car repairer	McAdam	Wounded
Wilson, William	Clerk	Montreal	Wounded
Whitney, Percy Howard	Wiper	Moose Jaw	Wounded

The Canadian Railway Club's annual meeting was held at Montreal, May 8. Following are officers elected for the current year: President, G. E. Smart, Master Car Builder, Canadian Government Railways, Moncton, N.B.; First Vice President, C. W. VanBuren, General Master Car Builder, C.P.R., Montreal; Second Vice President, T. C. Hudson, Master Mechanic, Quebec Division, Canadian Northern Ry., Joliette, Que.; Executive Committee, J. Hendry, W. H. Winterrowd, E. J. McVeigh, C. H. N. Connell, A. Crumpton, E. A. Nix; Audit Committee, A. G. Mitchell, D. R. Arnold, G. Whiteley; Treasurer, E. E. Lloyd; Secretary, Jas. Powell, Montreal.

C.P.R. Baggage Statistics. — During 1916 the C.P.R. handled 7,899,652 pieces of individual baggage, including 1,162,472 milk cans, and 28,309 baby carriages. The amount paid on loss was only $1,791.79; on damage only $1,669.08; and on pilferage only $571.07, the cost to the company in these respects being only 5c per 100 parcels.

The C.P.R. is reported to have subscribed for $1,000,000 of the Liberty Loan bonds issued by the United States Government.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	$3,834,200	$2,636,800	$1,197,400	$ 711,000
Aug.	3,684,900	2,612,900	1,072,000	614,300
Sept.	3,187,900	2,455,300	732,600	x177,300
Oct.	3,716,800	2,496,500	1,220,300	x36,700
Nov.	3,722,300	2,472,300	1,250,000	38,600
Dec.	3,485,400	2,661,600	823,800	x378,300
Jan.	2,832,600	2,350,500	482,100	226,700
Feb.	2,358,600	2,250,400	108,200	x21,200
Mar.	3,273,200	2,655,100	618,100	251.700
Apr.	3,315,500	2,557,600	757,900	208'000
	$33,411,000	$25,149,000	$8,262,400	$1,436,800
Incr	$6,452,500	$6,015,710	$1,436,800	.....

* Deficit.

Approximate earnings for three weeks ended May 21, $2,476,900 against $2,118,800 for same period 1916.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from Jan. 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Increase
Jan.	10,158,307.86	7,726,829.36	2,431,478.50	341,070.27
Feb.	9,084'276.76	7,098,227.96	1,986,048.80	x308,293.94
Mar.	11,846,542.98	7,909,225.16	3,937,317.82	516,987.46
Apr.	12,355,519.60	8,180,541.98	4,174,977,62	441,241.65
	$43,444,674.20	$30,914,824.46	$12,529,322.74$	990,005.44
Inc.	$ 4,797,702.51	$ 3,807,697. 07$	990,005.44	.....

Approximate earnings for three weeks ended May 21, $9,262,000 against $7,965,000 for same period 1916.

Grand Trunk Railway Earnings.

The aggregate traffic receipts from Jan. 1 to April 30 are:

G.T.R.	$14,617,203	$13,577,901	$1,039,302	.....
G.T.W.R.	2,807,321	2,914,947	.....	$107,626
D.G.H. & M.R.	1,005,933	1,002,511	3,422	.....
Totals	$18,430,457	$17,495,359	$935,098	.....

Approximate earnings for three weeks ended May 21, 3,917,291 against $3,195,883 for same period 1916.

Grand Trunk Pacific Ry. Earnings.

The approximate earnings of the Prairie Section, 916 miles, from Jan. 1 to April 21, were $1,346,594 against $1,411,519 for same period 1916.

Cultivating Railway's Right of Way.—Grand Trunk Pacific Ry. employes have been notified that the company's whole right of way is offered for gardening purposes without any charge to employes. Whatever crops can be raised on this land will belong absolutely to the employes who do the work. If the section man is able to lay out his garden 25 ft. wide, he needs a length of 400 ft. only to give him a garden of a quarter of an acre. City gardeners, who often get results worth while from a tenth of this space will realize the opportunity that the section man has in the way of feeding his family and possibly raising crops to sell.

Cost of Handling Freight.—The Minister of Customs stated in the House of Commons, May 3, that the cost per calendar month during the winter of 1916-17 at Pictou, Charlottetown and Georgetown, respectively, of handling freight going to and from Prince Edward Island was:—Charlottetown, Nov., 67c. per ton; Dec., $1; Jan. 1 to 10, 73c. Georgetown, Jan. 10 to 31, 45c; Feb., 44c; Mar., 40c; April 1 to 21, 38c. Pictou, Jan., Feb. and Mar., 0.626c. At present freight is handled at Pictou for Prince Edward Island at a cost of 0.434c per ton.

Railway Development, Projected Lines, Surveys, Construction Betterments, Etc.

Alberta-Hudson Bay Ry.—The Alberta Legislature authorized the High River & Hudson Bay Ry. to change its name to the Alberta-Hudson Bay Ry., extended the time for the building of the projected railway from High River to the Alberta-Saskatchewan boundary, and has given power to build the following additional lines: From near Black Diamond, in Tp. 20, Range 2, west 4th meridian, southerly to Lundbreck, or Cowley or the Crowsnest Southern Ry., thence to the Alberta-British Columbia boundary at the South Kootenay or Kishenckna Pass; from Lundbreck or Cowley southerly to the International Boundary near Waterton Lakes; from Lundbreck or Cowley southeasterly to Pincher Creek, Cardston and Coutts, thence easterly through Tps. 1, 2 and 3 to the Alberta-Saskatchewan boundary; from Cardston to Lethbridge; from Tps. 1 or 2, between Ranges 3 and 10, to Medicine Hat, thence northerly to Tp. 17 or 18 in Ranges 1, 2, 3 or 4, west of the 4th meridian. (May, pg. 193.)

Athabasca Valley Ry.—The Alberta Legislature has granted an extension of time for the building of the projected railway from Busby, on the Edmonton, Dunvegan & British Columbia Ry., 44.7 miles from Edmonton, northwesterly to Fort Assiniboine, 50 miles. J. D. McArthur is principally interested. (May, pg. 193.)

Central Canada Ry.—We are officially advised that the bridge being erected over the Peace River, on this railway, which is in operation from McLennan, on the Edmonton, Dunvegan & British Columbia Ry., to the river, 48.5 miles, is of the single track type, and is designed to carry highway attachments on either side when future development requires them. The length is 1,737.2 ft. between abutment parapets. The approximate height and class of material of the abutments and piers forming the substructure is: East abutment, curved, 58 ft. high, reinforced concrete; piers 1 and 2 are concrete pedestals; pier 3 is of concrete masonry approximately 48 ft. high; pier 4, masonry, 62 ft. high; pier 5, masonry, 70 ft. high; pier 6, masonry, 78 ft. high; pier 7, masonry, 82 ft. high; pier 8, masonry, 86 ft. high; pier 9, masonry, 70 ft. high; pier 10 is a concrete pedestal; while the west abutment is of reinforced concrete, buried, 29 ft. high. The superstructure consists of the following spans: two 70 ft. deck plate girders; two 80 ft. deck plate girders; six 200 ft. deck truss spans, and one 200 ft. through truss span. This latter span will give a clearance of 71 ft. above low water elevation and 54 ft. above extreme high water elevation, sufficient to meet the requirements of all northern river navigation. The deck spans will give 19 ft. clearance above high water level. The substructure is being built by the company by day labor, and a contract for the superstructure has been given to the Canadian Bridge Co., Walkerville, Ont. The cost of the entire structure will be in the neighborhood of $1,000,000. Work on the substructure was started Feb. 1, and it is hoped to start putting up the superstructure Jan. 1, 1918, and to have traffic operating over the bridge by May 1, 1918.

The Alberta Legislature has authorized the company to build the following additional lines: An extension of the line authorized by chap 46, 1913, from Tp. 81, Range 4, west of 6th meridian, westerly to the western boundary of the Province; to extend the same line northerly to the northern boundary of the Province, approximately parallel with Hay River; a branch line from Tp. 74, Range 17, west of 5th meridian, near High Prairie, southerly to Snipe Lake, thence westerly to 6th meridian; and a line from near Edmonton to Calgary. The line authorized to be built in 1913 was to start from Tp. 74 or 75, Range 18 or 19, west of 5th meridian, to Peace River Landing, thence to Tp. 86, Range 4, west of 6th meridian, with a branch from Peace River Landing northerly to the Brule River, near Tp. 94, Range 22, west of 5th meridian. (May, pg. 193.)

Dolly Varden Mines Ry.—This projected railway would be about 18 miles long and would extend from Alice Arm, referred to in the discussion in the British Columbia Legislature as Saltchuck, to the Wolfe mineral claims, in the Kitzault River valley. A press report states that construction will be started at once, but the plans do not appear to have been passed by the B.C. Minister of Railways. (May, pg. 193.)

Grand Lake Ry. & Transportation Co.—The railway authorized to be built by the company would extend from Christopherson Lake, on Bell River, to Twenty-one Mile Bay, on the Ottawa River, and from Lake Atikamek to Rabbit Lake, on the Ottawa River. The company is authorized to carry on a general navigation business on all waters "south of the National Transcontinental Ry., and between Nottaway and Amos, on the said railway, and the Ottawa River, and elsewhere on the Ottawa River above Quinze River, and on all lakes, rivers, streams and watercourses tributary thereto," and to connect the various routes by roads, etc. The provisional directors are: Hon. Geo. Bryson, J. W. Bryson, J. R. Fraser, W. H. A. Fraser, Hon. Geo. Gordon, A. B. Gordon. (Jan., pg. 19.)

Grand Trunk Pacific Ry.—The City of Brandon, Man., is appealing to the Dominion Parliament to compel the company to complete its line into that city. The line is graded from Harte to the city boundary, and has been lying ready for the steel for four or five years. The company is applying to the Dominion Parliament for an extension of time to complete this and other lines.

Track laying is reported to be in progress from the south branch of the Saskatchewan River into Prince Albert, Sask., 25 miles. Track was laid over the bridge into St. Louis and the grading practically completed into Prince Albert during 1915. (May, pg. 193.)

Grand Trunk Ry.—The Board of Railway Commissioners has given the City of Brantford permission to construct a subway under the G.T.R. at St. Pauls Ave., the plans to be approved by the board's Chief Engineer. A subway for pedestrians is estimated to cost $10,000, towards which the Railways Department will contribute $2,000 from the level crossings elimination fund; and the G.T.R. will have to contribute $4,800; the city bearing the balance of the cost. If the city desires to put in a subway for vehicular traffic, with sidewalks for pedestrian traffic, the order will issue in that form, the Dominion contribution being 20%, not to exceed $5,000, and the G.T.R. contribution being limited to $4,800, as the city had agreed with the company in 1905 to close the highway, except for pedestrian traffic. (May, pg. 193.)

Greater Winnipeg Water District Ry.—Progress was reported to have been made on the construction of the extension of the line from Deacon to the Red River at the meeting of the commisison in Winnipeg, May 3. Track was said to have been laid from Deacon to Maxeanch, and the culverts to have been put in on the remaining length of the line. The consent of other railways had been obtained for this line to cross them. (April, pg. 136.)

Great Northern Ry.—A press report states that R. D. Fry, said to be of the G.N.R. engineering staff, has completed a preliminary survey for a line from Pincher Creek to Cardston, Coutts and Medicine Hat, and is preparing to make a survey for a line from Cardston into Lethbridge, Alta. Another report connects these surveys with the projected Alberta-Hudson Bay Ry., formerly the High River & Saskatchewan Ry., in Alberta, and the High River & Hudson Bay Ry., under a Dominion charter, and points out that the line referred to as being surveyed would connect with the G.N.R. branch from Shelby now running into Coutts. A third report connects the surveys with the Chicago, Milwaukee & Parry Sound Ry. (May, pg. 193.)

Hudson Bay Ry.—The Minister of Railways stated in the House of Commons, April 30, that the amount spent on the Hudson Bay Ry. and the approaches thereto since Jan. 1, 1912, was $17,790,587.74. The work on the railway, the terminals at Pas and Port Nelson were still being gone on with.

Press reports state that preparations are being made for opening up work for the season on the uncompleted portion of this railway. About nine miles of grading has yet to be completed at the Port Nelson end and about 90 miles of track has to be laid. No more track will be laid until the completion of the bridge across the Nelson River at Kettle Rapids. There are two other single span bridges to be erected. The line is expected to be completed into Port Nelson this year. (Mar., pg. 100.)

Intercolonial Ry.—The Minister of Customs stated in the House of Commons, May 7, for the Minister of Railways, that the Dominion Government proposed to build a station in Levis, Que., on the most suitable site that can be found, as early as war conditions will permit. The existing station is being put in repair. (May, pg. 193.)

Kenora & English River Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from the National Transcontinental Ry. in Kenora District, west of Superior Jct., northerly and westerly, crossing the English River west of Lac Seul, thence northerly and westerly in the District of Patricia, thence westerly and southerly to and in Manitoba to Winnipeg. The office of the company is to be in Toronto; the authorized capital is $1,000,000, and the company may issue securities for $50,000 a mile. The provisional directors are: W. Miller, A. LeR. Williams, E. Miller, C. Flatt and A. A. Macdonald, Toronto.

Lacombe & Blindman Valley Electric Ry.—We are officially advised that although the word "electric" is included in the title, it is not really an electric railway. It is being built with a guarantee

of bonds by the Province of Alberta under the terms of an act for the building of light railways. About 36 miles of grading has been completed from Lacombe to near Rimby, the objective terminal, 39.1 miles from Lacombe, and a considerable portion of the fencing has been done. The company has on hand ties for 18 or 19 miles, and a quantity of materials, such as fastenings, switches, Y's, etc. It is hoped to complete the line during this year.

The company purchased in 1914 a car of English manufacture, operated by gasoline hydraulic power, an illustrated description of which was given in Canadian Railway and Marine World for Nov., 1915. (May, pg. 203.)

Manitoba & Ontario Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from near Brereton Station, Man., on the National Transcontinental Ry., to English River, beween the easterly boundary of Manitoba and the 94th meridian of longitude, thence northerly to Hudson Bay between the mouths of the Albany and Nelson Rivers; to build wharves, docks, etc., there; and to connect the railway with any other railway serving the territory. Ewart, Scott, MacLaren & Kelly, Ottawa, and H. A. Stewart, Brockville, Ont., are solicitors for applicants.

Montreal Central Terminal Ry.—C. N. Armstrong, who is spoken of as Vice President and Chief Engineer, appeared before the Montreal Tramways Commission May 7, to submit the company's plans, and to suggest that arrangements be made whereby the Montreal Tramways Co.'s suburban cars should run into the Central station, which it is proposed to build. The property controlled by the company lies between St. Lawrence and Bleury Sts., from east to west, and between Vitre and Lagauchetiere Sts. from south to north. Mr. Armstrong explained the company's plans as providing for the construction of 13 or 14 miles of track, of which about eight miles would be open cut, and the remainder tunnel and subway work. The carrying out of the plans would involve the widening of Vitre St. An entrance to the proposed terminal station would be provided for the suburban cars along the projected lines. The commissioners were given a set of the blue prints to study. (April, pg. 136.)

Naas & Skeena River Ry.—The British Columbia Minister of Railways, under the authority conferred upon him by the B.C. Railway Act, has extended to May 31, 1918, the time within which the company may begin construction of its railway. The company was incorporated by the B.C. Legislature in 1911 to build a railway from Nasoga Gulf, or Naas Bay, on Portland Inlet, to the headwaters of the Skeena River. Barnard, Robertson, Hesterman & Tait, Victoria, B.C., are solicitors for the company. (Jan., 1916, pg. 10.)

Pas, Man.—We are advised by Hayden, Stone & Co., Boston, Mass., that they are not interested in any mining properties north of Pas, Man., in connection with which a press report stated a 98 mile railway was to be built. (May, pg. 193.)

Quebec & Saguenay Ry.—The British Chancellor of the Exchequer stated in the House of Comomns recently that the War Cabinet would consider the possibility of Hamilton Inlet, on the Labrador coast, as an anchorage and outlet for Canadian trade. Hamilton Inlet is about 900 miles from Quebec, and provides practically the shortest route for steamships between the Canadian seaboard and Liverpool. The Q. & S.R., which was taken over by the Dominion Government last year, had a project for extending its line from the Saguenay River to Hamilton Inlet.

The Minister of Railways stated in the House of Commons recently that no money was paid by the Department in connection with the Q. & S.R., but that work to the value of $180,000 was done on the line. It is estimated that an expenditure of $1,000,000 is required to complete the line. (Jan., pg. 20.)

Queen's County Ry.—The Nova Scotia Legislature has extended the time for the building of this projected railway from the Halifax and South Western Ry. between Liverpool and Shelburne, to any of the Sable Lumber Co.'s timber limits. V. J. Paton, Bridgewater, N.S.; J. Walker, Newmarket, N.H.; and H. W. Anderson, New Hampstead, N.H., are primarily interested. (June, 1912, pg. 302.)

Skye Mountain Ry.—The Nova Scotia Legislature has granted an extension of time for the building of a railway in the Skye Mountain district of Inverness County. The railway projected is connected with the opening up of some collieries in the vicinity of Orangedale. (Aug., 1914, pg. 371.)

Timiskaming & Northern Ontario Ry.—We are officially advised that nothing definite has been decided with regard to the extension of the Kirkland Lake branch for which the Legislature voted $125,000 recently.

The work of revising the original line between North Bay and Liskeard, which has been in progress, will, it is anticipated, be continued during this year. Three sections described in our last issue were selected for completion in 1916, but grading only was done on one of them. The work for 1916 will likely cover the other two sections. (May, pg. 195.)

Toronto, Hamilton and Buffalo Ry.—The two sections of the company's bill which came before the Railway Committee of the House of Commons, May 18, to which objection was taken by the Hydro Electric Power Commission of Ontario, have been withdrawn. The first of these sections extended the time for building an extension of the line from Port Maitland to Port Colborne, and the second asked for authority to build an extension of the line now terminating in Crowland Tp., Welland County, to Port Colborne, Ont. May, pg. 194.)

The Ridge Coal Co. has been incorporated under the New Brunswick Companies Act to carry on mining and certain allied businesses in the province, and in connection therewith to build or acquire wharves, vessels, barges, tramways, cars, motor vehicles, etc., and "to enter into any agreement with any railway company or companies for the construction, use and operation of a spur or siding or line of railway connecting the company's mine with any railway." The company's office is at Newcastle, N.B., its capital $24,000, and the provisional directors are, H. H. Brewer, R. M. McCarthy, and J. A. Sinclair, St. John, N.B.

Quebec & Saguenay Ry. Sale.—The Senate on April 26, directed that a copy of all proceedings in the Exchequer Court of Canada, and the judgment of Justice Cassels concerning the value of the Quebec & Saguenay Ry., the Quebec & Montmorency Ry., and the Lotbinere & Megantic Ry., be laid on the table.

Canadian Pacific Railway Co's Annual Meeting.

At the 36th annual meeting in Montreal, May 2, Lord Shaughnessy, who presided, in moving the adoption of the report as published in Canadian Railway and Marine World for May, said: The reason for the change in the date of the annual meeting recommended by the directors is explained in the report of the company's affairs that I now have the honor to submit for your consideration and approval. The practice of making the fiscal year of railway companies on this continent correspond with the calendar year will henceforth be quite universal, and the desirability of being able to compare this company's annual statements and statistics with those of other railway companies similarly situated for like periods is manifest.

The revenue statements are very satisfactory. Indeed, the earnings were much better than we had reason to anticipate in October last, but I am afraid that the substantial advance in wages, due in a large measure to the shortage of labor and the abnormal increase in the price of fuel and of all the other articles that we find it necessary to purchase, will have an important bearing on the working expenses in future.

Since the close of the half year, under an agreement with the Imperial Government, 4% consolidated debenture stock to the amount of $40,000,000, which the company was empowered to issue and you had authorized, was issued and loaned to the Imperial Treasury for a maximum period of five years, at a premium of ½% per annum over the interest payable on the stock. Provision is made in the agreement for the sale to the British Treasury of this stock in annual instalments, should the company require money for any of its purposes in Great Britain, and the Treasury reserves the right to purchase all or any of the stock during the five years at the price of 80% of its face value. The bylaw passed by the directors giving effect to the transaction will be submitted for your sanction. The plan formulated at the request of the Lords of His Majesty's Treasury for creating and selling collateral trust bonds of the company to the amount of about $199,000,000 against debenture stock and other securities of the company and its leased lines to be deposited by the Imperial Treasury, fully described in the annual report and in the circular to the shareholders, has, because of financial negotiations and arrangements resulting from the participation of the United States in the European war, been abandoned, for the present at any rate. In order, however, that the company may be in a position to co-operate should the occasion arise hereafter, it is proposed, at the instance of the Chancellor of the Exchequer, to ask the Parliament of Canada to grant the statutory powers for which application has been made, and the special general meeting will, with your consent, be adjourned to a later date. The willingness of the company to lend its name and credit to the Imperial Treasury in connection with financial operations at this juncture is keenly appreciated, and I am asked by the Chancellor of the Exchequer to convey to you the thanks of the Imperial Government for the important assistance that you are ready to give.

The report was unanimously adopted and bylaws were approved changing the date of the annual meeting to the first Wednesday in May in each year, respect-

ing consolidated debenture stock, and respecting preference stock.

The retiring directors, E. W. Beatty, K.C., Hon. F. L. Beique, K.C., Jas. Dunsmuir, and C. R. Hosmer were unanimously re-elected.

The special general meeting of shareholders to consider the issue of collateral trust bonds was adjourned to Aug. 13.

The board then met and re-elected officers, etc., as follows: President, Lord Shaughnessy; Vice Presidents, George Bury and E. W. Beatty; Executive Committee, R. B. Angus, E. W. Beatty, K.C., George Bury, Sir Herbert S. Holt, Sir Edmund B. Osler, Lord Shaughnessy.

Investigation into Pacific Great Eastern Railway Affairs.

The committee appointed by the British Columbia Legislature to make an investigation into Pacific Great Eastern Ry affiairs presented its report May 1. After recapitulating at length the main facts as to the formation of the company, which were given in detail in Canadian Railway and Marine World for May, pg. 191, the committee presented findings upon 15 distinct points, giving reasons for each finding in considerable detail. Following is a summary of the findings:—

The promotion of the company was brought about by an arrangement made in 1911 between D'Arcy Tate, K.C., and J. W. Stewart, whereby it was agreed that the former should secure the charter and guarantees from the Provincial Government, and a traffic arrangement with the Grand Trunk Pacific Ry. For this he was to receive a commission of one-fourth of the capital stock of the company and $500,000 in cash, out of which he was to pay incidental expenses and provide campaign funds for the Conservative party. D'Arcy Tate and ex-Premier Bowser refused to give the committee any information as to the money provided for campaign purposes.

The total share capital of $24,960,000 was issued to the promoters, Foley, Welch, Stewart and Tate, the remaining $40,000 of stock being fully paid up in cash. The committee consider that this issue of shares was illegal and improper.

The contract for the construction of the line made with P. Welch, was in fact a contract made with the firm of Foley, Welch and Stewart, and was made with Welch to conceal the real nature of the transaction. The committee holds that the contract is invalid, and that Stewart and Foley are disqualified from acting as directors of the company. E. F. White and F. Wilson, two of the other directors, were interested in subcontracts out of which they made considerable sums without giving any apparent value therefor.

The prices fixed in the contract were excessive, which is shown by the fact that on an expenditure by the province of $18,-314,825 P. Welch appears by his own figures, made a profit of over $5,000,000.

The government has paid out the full amount of its trust funds without proper supervision or inspection of the work. The extent to which advantage was taken of the lack of proper supervision and inspection the committee is not able to fully ascertain. Five specific matters are mentioned in respect of which the committee finds there had been over payments of approximately $405,000.

The provincially guaranteed bonds of the company amounting to $20,160,000 were sold for $18,314,825, which was paid into the bank in the name of the Minister of Finance as a trust fund to be paid in accordance with Schedule A of the company's act. The total proceeds have been paid over to the company, which the committee says "was illegal and improper," as the full subsidy has been paid on a mileage of 480 miles, or 3.09 miles in excess of the actual total mileage, an overpayment of $160,800; the full subsidy has been paid on 284 miles on which no track has been laid or bridges built and the full subsidy has been paid upon 51 miles on which no construction work whatever has been done. The over payments in contravention of statute are estimated at $5,705,316.50 altogether, apart from overpayments for excessive profits or upon wrong classification. It is estimated it will require $13,000,000 more to complete the line.

The bond of $250,000 furnished by Foley, Welch and Stewart as a guarantee for the completion of the work was allowed to lapse by the late government.

There is due to the government $85,-524.93 balance of the money deducted by the company's fiscal agent in England on the sale of the guaranteed bonds.

Foley, Welch, and Stewart have defaulted in their covenant to pay interest on the bonds, upon which the Government has already paid $1,053,827 interest. The contractors the committee state, "have defaulted in their covenant to complete the road and state their inability to complete their contract."

The province has no security for its bonded guarantee against the company's terminals or against the lands held in the Development Co.'s name.

P. Welch's contention that the contractors had lost money is not well founded, as upon the basis of their own figures they made a net profit of $5,170,177.

The Legislature in 1916 provided a loan of $6,000,000 to the company without provision for taking further guarantees from the contractors.

A. H. B. Macgowan, a member of the Legislature, was given a share in a subcontract by P. Welch, receiving therefor $9,000 in cash, for which he gave no consideration either in time, money or otherwise."

The committee found its investigations hampered by its inability to secure certain private ledgers of P. Welch kept in connection with the P.G.E.R. D. McLeod, confidential representative of J. W. Stewart, also by the refusal to testify and disappearance of D'Arcy Tate, and the refusals to testify of R. D. Thomas and W. J. Bowser, M.L.A. The departure of Welch, White, and Tate was in defiance of the committee's orders. The committee feels that in view of the absence of material witnesses and its inability to act after the expiry of the session, further investigations should be by another form of tribunal.

A resolution was passed receiving the report. Warrants have been issued by the Legislature for the arrest of D'Arcy Tate, P. Welch, and E. F. White for contempt.

The B.C. Government, on May 11, filed a writ against the P. G. E. Ry., its subsidiary companies, the contractors, and the individual directors for an accounting of the sums realized from the sale of guaranteed bonds; for an injunction restraining them from further proceeding with the work of the railway; for a revision of the agreement; for specific performance of the contract; and for damages. The points upon which judgment is asked cover practically all the facts found by the committee in the report quoted above.

A motion was introduced in the B.C. Legislature, May 14, directing the government to have the necessary legislation passed to take over the company's property and assets and to take such action as may be necessary against the company or any other company, and the individuals forming the company to obtain restitution of funds wrongfully obtained; to amend the loan act so as to allow the $5,000,000 remaining to be used towards the completion of the line; to give the Minister of Railways power to operate the line; and to apply to the Dominion Government for a bonus of $12,000 a mile, equal to that granted the Canadian Northern Pacific Ry.

On May 15 notice of motion was given in the Legislature with a view to the appointment of a commission with power to call W. J. Bowser, R. D. Thomas, D'Arcy Tate, P. Welch, D. McLeod, E. White and any other person and to compel them to answer as to their knowledge of the payments of any money whatsoever, whether mentioned above or not, and to whom any part of said amounts were paid and for what purpose, with power to commit to gaol any person for contempt until such times as they answer any or all questions, and that R. D. Thomas and W. J. Bowser, or any other persons who refuses or refused to answer the questions put to him by the P. G. E. committee be turned over to the commission before the prorogation of the legislature; and that warrants or subpoenas issued by the speaker be continued until the parties are produced before the commission. The purpose of this investigation seems to be to ascertain what funds were used for campaign purposes, rather than to deal with the construction end of the affair.

Fortnightly Pay Day for Railway Employes.—The Dominion Parliament has under consideration a bill to amend the Railway Act by adding the following as subsect. 3 of sec. 259: "The salary or wages of every person employed in the operation, maintenance or equipment of any railway company to which the Parliament of Canada has granted aid by means of subsidy or guarantee, shall be paid not less frequently than once in each two weeks during the term of employment of such person." The bill was introduced by Senator Robertson and is on the Senate order paper for second reading on June 5.

Rails for Canadian Railways.—Arrangements have been made whereby the Imperial Munitions Board has agreed to release sufficient shell steel to enable the Algoma Steel Corporation, Sault Ste. Marie, Ont., to roll 10,000 tons of steel rails for the C.P.R.; 5,000 tons for the G.T.R., and 500 tons for the Timiskaming & Northern Ontario Ry. It is also said that sufficient shell steel will be released to enable the Dominion Iron & Steel Co. to roll 10,000 tons of steel rails for the Canadian Government Railways.

Sir Henry Drayton, Chief Railway Commissioner, and one of the Comimssioners to inquire into the railway situation, addressed the Canadian Club in Toronto, May 10, in support of the majority report made by himself and W. M. Acworth.

Canadian Transportation Men, Engineers, Etc. in the War.

C.P.R. Enlistments.—Up to May, 6,692 C.P.R. officials and employes had enlisted for overseas service, of whom 293 had been killed and 611 wounded.

The 255th Battalion, Queen's Own's Rifles, Toronto, under command of Lt. Col. G. C. Royce, left Toronto, May 25, for an eastern training ground.

No. 2 Section Skilled Railway Employes, which was mobilized in Montreal, arrived safely in England early in May. A photograph of some of the officers appears on this page.

Timiskaming & Northern Ontario Railwaymen's Patriotic Association.—Up to Mar. 31, the association had contributed $17,261.95 to the Canadian Red Cross Association; $23,932.80 to the Canadian Patriotic Fund, and $11,049.34 direct to enlisted employes.

A Forestry and Railway Construction Depot has been established in Ottawa, under command of Lieut. Col. Cecil Williams, where recruits for railway construction drafts from all parts of Canada will be mobilized for the forestry drafts. Those enlisted in military district 32 have been transferred to the Ottawa depot.

Canadians' Railway Work.—Sir Robert Borden, on returning from England recently, said: "The work of the Canadian railway corps has been of wonderful assistance to the allies. The rapidity in railway building by the Canadians amazed the English and French, and it was such marvellous work in construction of railways that permitted of the aggressive and continuous offensives by the allies on the west front."

PERSONAL NOTES.

Capt. Hon. W. J. Shaughnessy, son of the President, C.P.R., has been gazetted as an orderly officer, and is now in France.

Lieut. J. H. Hannaford, who was killed in action in France, May 10, was a son of R. M. Hannaford, Assistant Chief Engineer, Montreal Tramways Co.

Lieut. Geo. Lawson, who was for 10 years a C.P.R. travelling auditor, and for the past few years a customs broker in Winnipeg, has been killed in action.

Lieut. Eric M. Hersey, who is reported to be at a London, Eng., hospital, suffering from gas poisoning, is a son of Milton L. Hersey, Chemist, C.P.R. Montreal.

James Carruthers, President, Canada Steamship Lines, Ltd., has given $100,000 to the Military Hospitals Commission, which is being used to aid returned soldiers.

Brig.-Gen. J. W. Stewart, of Vancouver, who is in charge of the Canadian railway construction forces in France, has been mentioned in Sir Douglas Haig's dispatches.

Acting Lieutenant-Colonel B. R. Hepburn, M.P., formerly President, Ontario & Quebec Navigation Co., who is overseas, has been gazetted as Assistant Director of Timber Operations.

Capt. John Baillies, of the Grand Trunk Pacific Coast Steamship Co.'s service, has entered the naval service for the war, under certain new regulations, with the rank and pay of "skipper."

Sir Edmund Osler, M.P. for West Toronto, and a C.P.R. director, has given $2,000 to assist in the recruiting campaign which is being carried on in the Province of Quebec by Postmaster General Blondin.

Capt. F. W. Goosons, who was on the National Transcontinental Ry. surveys a few years ago, and afterwards became a real estate agent in Winnipeg, has been killed in action. He was born in Brussels, Belgium, in 1887.

Norman S. Rankin, formerly Publicity Agent, Natural Resources Department, C.P.R., Calgary, Alta., who lost his commission as captain, owing to the breaking up of the battalion he was in, has enlisted in a signal corps at Ottawa for overseas service.

Lieut. J. Hallisey, who was killed in action, April 8, was formerly a dispatcher on the Halifax and South Western Ry., and was son of J. T. Hallisey, Superintendent, District 6, Intercolonial Division, Canadian Government Railways, Truro, N.S.

Lieut. R. N. Stuart, R.N.R., who was recently awarded the D.S.O., is a son of the late Capt. Neil Stuart of Prince Edward Island, and has been in Allan Line service for several years. At the outbreak of war he was second officer on the s.s. Alsatian.

Capt. B. T. Easteway, who is reported to have been killed whilst in charge of one of His Majesty's vessels, was for several years in Allan Line service and last year was in command of the s.s. Ionian, after she was released from Admiralty service.

E. S. Scott, formerly train dispatcher, Atlantic, Quebec & Western Ry. and Quebec Oriental Ry., New Carlisle, Que., enlisted as a private with the 244th Battalion, Kitchener's Own, which went overseas in April. Over 50% of the head office staff of the railways mentioned have enlisted and are overseas.

Capt. W. B. Hanna, only son of D. B. Hanna, Third Vice President, Canadian Northern Ry., who went overseas as a lieutenant in the 92nd Battalion, Toronto Highlanders, has been appointed Commandant of the Stationery Service, Canadian Expeditionary Force, in London, Eng.

Lt. Col. G. S. Cantlie, formerly General Superintendent of Car Service, C.P.R., and now of the 42nd Battalion, Royal Highlanders of Canada, C.E.F., who returned to Canada for a short leave during the winter, was invested with the D.S.O. at Buckingham Palace, London, Eng., on May 12.

Lt. Col. G. S. Rennie, M.D., formerly Surgeon in Chief, Dominion Power & Transmission Co. and Toronto, Hamilton & Buffalo Ry., who has been at Shorncliffe, Eng., for some two years, as A.D.M.S. in charge of hospitals, is reported to have received an important appointment in France.

Brigadier General A. E. Labelle, one of the Harbor Commissioners for Montreal, has received the cross of the Legion of Honor from the French Government. The announcement was made by Marshal Joffre at Montreal, May 13, when he regretted that he was unable to present the decoration personally.

Officers and Non Commissioned Officers, No. 2 Section, Skilled Railway Employes.

This illustration shows some of the officers and non commissioned officers of the above mentioned section, which was mobilized in Montreal and arrived in England early in May. Reading from left to right they are: Lieut. J. Swaile, Lieut. W. W. Webster, formerly Foreman, Steel Car Shop, C. P. R., Winnipeg; Capt. R. McKillop, officer commanding, formerly Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal; Lieut. J. S. Hall, Adjutant, Sergeant Major Oxley. Sergeant Major W. R. Spencer, formerly agent, National Transcontinental Railway, Cochrane, Ont.

T. C. Irving, Jr., Vice President, Robert W. Hunt & Co., consulting and inspecting engineers, etc., Montreal and Toronto, has been promoted to Lieutenant-Colonel in the Canadian Engineers. He left Toronto with the first Canadian contingent as Captain in the 2nd Field Company of Engineers. He received the D.S.O. for services at the battle of Langemarck, and was promoted to Major. On the death from wounds of Lt. Col. Inksetter, he was given command of the Canadian Engineers in the fourth Canadian Division.

Harold A. Logan, formerly local manager, Great North Western Telegraph Co., Belleville, Ont., whose death was reported recently as a result of the torpedoing of a hospital ship by the Germans, served in France as a telegrapher from early in 1915. He had been wounded in both arms, and after spending some time in hospitals in France was being transferred to England. He was a native of Halifax, N.S.

Lieut. W. B. McArthur, M.C., who was killed in action recently, was, prior to enlistment, on the C.P.R. staff in London, Eng. He enlisted as a private in the Lon-

don Scottish, and after nine months in France, received a commission in the Royal Scots Fusiliers, in Nov., 1916. He received the Military Cross in May, 1916, for conspicuous determination when in charge of a working party, when with 12 men he captured and brought in as prisoners over 40 armed enemies. At the time of his death, he was acting as captain, during the absence of an officer of that rank.

Major James Arnold Delancey, B.Sc., McGill University, A.M.Can.Soc.C.E., of Vancouver, who has been killed in action, was born at Middleton, N.S., July 15, 1880. He was Assistant Engineer, United Fruit Co., Bocas del Toro, Panama, from May, 1909, to Oct. 1910, and engineer in charge from Oct. 1910 to Jan. 1, 1911. From Jan. 1, 1911 to Feb. 5, 1912, he was Chief Engineer at Paris for United Fruit Co., Bocas del Toro, Panama. Subsequently he did surveying work in British Columbia, including city surveys in Vancouver. When war broke out he returned to his native province of Nova Scotia, enlisted and went overseas as captain and adjutant in an infantry battalion. He was mentioned in dispatches and awarded the Military Cross.

Major John Campbell Galway, B.A., B.E., A.M.Can.Soc.C.E., who has been killed in action, was born at Southmolton, Devonshire, Eng., June 18, 1876. In June 1889 he graduated in engineering and arts at the Royal University of Ireland. Subsequently he was agent and engineer for Fisher & Lefarm, Belfast, Ireland, on a Belfast water works contract, including heavy concrete work and tunnelling with compressed air and with shield and cast iron lining. He then laid a second line of 44 in. on the Manchester Corporation's Thirlmere aqueduct syphons. For the same firm he completed the Great Southern & Western Ry. of Ireland's Cashel branch. In 1906 he was a surveyor on the Liverpool Dock Board staff. On coming to Canada in 1907 he was employed as a transit man in the C.P.R. Irrigation Department. Then he was in charge of engineers in construction of camps of the New Canadian Co., Ltd., building the Atlantic, Quebec & Western Railway in the Gaspe Peninsula and then became chief of a survey party on that line. In April, 1912, he was appointed Resident Engineer on Eastern Lines, Canadian Northern Ry., and was shortly afterwards appointed a division engineer, remaining in the company's service until Dec. 1913, when he left on account of the completion of construction. He was subsequently in the Ottawa Water Works Engineering Department until Sept. 1915, when he received a commission as a lieutenant in one of the Canadian pioneer corps. He was soon promoted to captain, and a short time before his death was gazetted a major. He was probably killed a few days after the storming of Vimy Ridge, as A. F. Stewart, Chief Engineer, Eastern Lines, Canadian Northern Ry., received a letter from him on May 8, describing that operation.

British Columbia's Relationship with the Canadian Northern Pacific Railway.

The B.C. Minister of Railways presented to the Legislature, on May 14, a report of the auditors engaged by the government to check up the payments made to the C. N. P. Ry., out of the proceeds of the provincially guaranteed bonds. The report states that to Dec. 31, 1916, there had been paid to the company amounts in excess of the proper value of work done, as follows: On main line, $2,426,927.81; on branch lines, $2,127,519.29; on terminals, $1,117,117.52; total, $5,671,564.62. These figures, the report states, are confirmed by the Attorney General's Department.

Subsequently a resolution was passed calling for all correspondence and memoranda dealing with the relations between the C. N. Ry. and the B.C. Government relating to the construction of lines on Vancouver Island.

Railway Rolling Stock Notes.

The British Government has ordered 50 six-wheel switching locomotives from the Baldwin Locomotive Works.

The Manville Asbestos Co., Asbestos, Que., has received 2 saddle tank locomotives from Canadian Locomotive Co.

The Canadian Northern Ry. has received 6 snow ploughs, nos. 7333 to 7335, and 7341 to 7343, from its Winnipeg shops.

Canadian Government Railways have received the last 3 Mikado locomotives, of its order for 50, from Canadian Locomotive Co.

The C.P.R. has purchased 20 air dump cars, and has also received 103 automobile furniture cars from its Angus shops, Montreal.

The Reid Newfoundland Co. is having 50 box cars, 50 flat cars, and 50 sets of draft gear, built by Canadian Car and Foundry Co. at Amherst, N.S.

The Greater Winnipeg Water District has added a second hand passenger car to its railway rolling stock. It was bought in Philadelphia, Pa.

Canadian Government Railways have received 2 Mikado locomotives from Canadian Locomotive Co., and 4 box cars, 50 tons capacity, from Eastern Car Co.

The C.P.R. has ordered 2 vans, 51 steel underframe flat cars 40 tons capacity, 70 steel underframe box cars 40 tons capacity and 5 refrigerator cars, to be built at its Angus shops, Montreal.

The Paris and Orleans Ry. (France) has ordered 50 Mikado locomotives, with cylinders, all 711 m. m. and of 200,000 lbs. weight, all equipped with superheaters, from American Locomotive Co.

The Russian Government has ordered 75 decapod freight locomotives from Baldwin Locomotive Works. In addition to these, the company has Russian orders for 150 decapod locomotives and 63 narrow gauge Mallet locomotives.

The Canadian Government Railways have purchased the following cars in the United States since Jan. 1, 1916: 500 coal, 50 sleeping, 10 dining, 18 tourist, 23 first class, 2 baggage and 2 mail and express.

The dimensions of the 50 all wood box cars, 20 tons capacity, which Canadian Car and Foundry Co. is building for the Reid Newfoundland Co., St. John's, Nfld., are as follows:

Length over end sills	30 ft.
Width over side sills	8 ft.
Length over running board	31 ft. 5⅝ in.
Width of door opening	5 ft.
Height, bottom of sill to top of running board	8 ft. 4 in.

Canadian Government Railways have ordered 1,000 steel frame box cars, 40 tons capacity, from the Eastern Car Co., and 1,000 similar cars from Canadian Car & Foundry Co., and have bought 10 second hand locomotives and 300 second hand 34 ft. box cars, 60,000 lb. capacity, from General Equipment Co.

Following are chief details of the 1,000 box cars which Canadian Government Railways have on order with the Eastern Car Co., for delivery in December and January:

Capacity	80,000 lb.
Length inside	36 ft.
Width	8 ft. 6½ in.
Height floor to carline	8 ft. 0½ in.
Width of side door opening	5 ft.
Height rail to top of brake mast	13 ft. 11¼ in.
Height rail to centre of coupler	2 ft. 10½ in.
Body bolsters, centre to centre	26 ft. 10 in.
Draft gear	Twin spring
Coupler	M.C.B. 5 by 7 in.
Air brake	Westinghouse K.C. 8 by 12 in.
Axles	M.C.B. 5 by 9 in.
Wheels	M.C.B. chilled cast iron, 33 in.
Journal boxes	M.C.B.
Journal bearings	M.C.B. lead lined 5 by 9 in.
Wedges	M. C. B. drop forged
Truck bolsters and brake beams	Simplex

The Canadian Car and Foundry Co. has received an order from the Russian Government for 1,600 sets of steel work for Russian box cars, without cabs, and for 400 sets for cars with cabs, each of 1,200 poods, approximately 20 tons, capacity. Following are chief dimensions of the cars:

Length	22 ft. 9 ins.
Width	9 ft.
(Not including thickness of military wall planks.)	
Height at side wall	7 ft. 8½ in.
Height at middle	8 ft. 4 in.
Base of cars	13 ft. 1½ in.
Projection of hand brake cars, at brake end	6 ft. 4 in.
at other end	5 ft. 6 in.
Projection of other cars, at both ends	4 ft. 11 in.
Outside length between the two faces of end sills, hand brake car	25 ft.
other car	23 ft.
Length with buffer, hand brake cars	28 ft. 10 in.
other cars	26 ft. 10½ in.
Gauge of wheels	5 ft.
Draft gear	European type with draw bar hooks and screw couplings
Journal bearing wedges	Drop forged 5½ x 10 in.
Dust guards	Rotary ring steel
Axles	M.C.B. 5½ x 10 in.
Wheels	Cast iron 39⅜ in.
Air brakes	Westinghouse Russian standard 8 in.
Roofing	Galvanized iron

Military Railway Building in France.—The United States War Department has called for the raising of nine engineer regiments—about 10,000 men in all—under the terms of the National Defence Act of June 3, 1916, which prescribed that in time of war the army might be provided with such additional units of a special character as were required, in addition to the establishment of fighting men provided by law. The men to be enlisted will not be drafted. They will be volunteers, and appeal is being made for those who have had railway, bridge building, subway, or other engineering experience in similar or related lines. The first detachment of U.S. army engineers arrived in England, May 23.

Workmen's Compensation on the Timiskaming & Northern Ontario Ry.—From Jan. 1 to Mar. 31, 18 claims were registered with the commission, all for minor accidents. Of these, 5 were passed and paid, 6 were disallowed, and 7 were kept in abeyance. The claims paid amounted to $248.58. The insurance cost for the period mentioned, based on premium paid in 1915, would have been $4,416.25, or an average premium of $883.25 to protect an average award of $49.71.

British Columbia Railway Expenditure.—The estimated expenditure for the province for the current financial year includes the following items: Cost of Railways Department, $100,380;; Nakusp & Slocan Ry., amount required in excess of earnings to meet interest charges, $23,000; Pacific Great Eastern Ry., to meet interest on guaranteed bonds, $907,200. The last two items are chargeable to capital account.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summeries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 188, Apr. 23.—Prescribing, for observance of every railway company within legislative authority of Parliament of Canada, regulations for uniform maintenance of way flagging rules for impassable track, effective June 1, and rescinding general order 161, Feb. 23, 1916.

26035. April 17.—Suspending, until further order, Supplement 1 to G.T.R. C.R.C. no. E-3304 and Supplement 2 to C.P.R. C.R.C. no. E-2931, to become effective May 1.

26036. Mar. 31.—Approving location of C.P.R. proposed station at Evesham, Sask., to be erected under order 25785, Jan. 5.

26037. April 23.—Authorizing G.T.R. to build siding on Lots 12-13, Hawkesbury, Ont.

26038. April 23.—Approving G.T.R. plan showing location of freight shed in New Toronto, Ont.

26039. April 23.—Authorizing Canadian Northern Ry. to join its Prince Albert Branch with Red Deer Lumber Co.'s spur in s.w. ¼ Sec. 34-44-28, w.p.m., Man.

26040. April 23.—Authorizing C.P.R. to build spur for Cope, Spencer & March, Calgary, Alta.

26041. Apr. 21.—Ordering Canadian Northern Ry. to erect standard 3rd class station at Excel, Alta., by Sept. 1.

26042. Apr. 23.—Ordering C.P.R. to erect flag station at Grant's Crossing, mileage 50.5, Waltham Branch, Que., by June 15.

26043. Apr. 24.—Authorizing Saskatchewan Highway Commissioners to make highway over Canadian Northern Ry. in n.w. 23-19-21, w. 2. m., cost to be paid by C.N.R.

26044. Apr. 25.—Ordering C.P.R. within 60 days to install bell at crossing of Queen St., Guelph, Ont., 20% of cost to be paid out of railway grade crossing fund.

26045. Apr. 25.—Amending order 8942, Nov. 30, 1909, re Michigan Central Rd. crossing gates at Highgate and Muirkirk stations.

26046. Apr. 26.—Authorizing C.P.R. to extend Pier D at north end of Granville St., Vancouver, B.C.

26047. Apr. 26.—Relieving C.P.R. from providing further protection at Centre St., Orangeville, Ont.

26048. Apr. 26.—Approving location of C.P.R. proposed station at Mossbank, Sask.

26049. Apr. 26.—Ordering Canadian Northern Ry. to provide stock yard and chute at Pas, Man.; work to be completed by June 1.

26050. Apr. 27—Authorizing Michigan Central Rd. to build spur from Lot 38, across Whirlpool Road, to Lot 57, Stamford Tp., Ont., about 620 ft., and from Lot 58, to its right of way, about 240 ft.; and to connect same with tracks of Hydro-Electric Power Commission of Ontario.

26051. Apr. 26.—Rescinding orders 9342 and 12312, Jan. 18, 1910, and Sept. 5, 1910, respectively, in so far as they order Great Northern Ry. to establish train service on Vancouver, Victoria & Eastern, and New Westminster Southern Rys. from Cloverdale north to Port Kells, and from Port Kells to Fraser River Bridge at New Westminster, B.C.; and authorizing G.N.R. to establish new timetable covering lines from Sumas via Abbotsford and Cloverdale to Vancouver; Guichon via Cloverdale to New Westminster; and Hazelmere to Abbotsford, B.C.

26052. Apr. 26.—Ordering G.T.R. to appoint night watchman at crossing of Niagara St. by its line and Niagara, St. Catharines & Toronto Ry. in St. Catharines, Ont.; N. St. C. & T. Ry. to pay wages.

26035. Apr. 24.—Dismissing C.P.R. application for approval of plan E. 299-1 showing proposed new main freight line, general layout, of new subway on Water St., and approach to Red River Bridge, Winnipeg, Man.; and amending order 9292 to provide that freight track over Water St. be not included in layout of station grounds at Fort Garry, Winnipeg.

26054. Apr. 27.—Authorizing Toronto, Hamilton & Buffalo Ry. to build spur in Hamilton, Ont., from Park Lot 12, MacNabb's survey, northwesterly to point marked 12+53.

26055. Apr. 20.—Dismissing complaint of G. H. Davis, Montreal, that G.T.R. refuses use of McGill St. yard, Montreal, for loading and unloading so-called cartage freight.

26056. Apr. 30.—Amending order 25912, Mar. 1, re Bell Telephone Co.'s poles on Main St., Richmond, Que.

26057. Apr. 19.—Dismissing complaints of City of Sherbrooke and Town of Laprairie, Que., against proposed increases by G.T.R. of tolls for passenger and vehicular traffic over Victoria Jubilee Bridge.

26058. May 1.—Ordering Central Vermont Ry. to provide eavetroughs on station building at Richelieu, Que.

26059. May 1.—Dismissing application of Retail Merchants Association of Canada, Toronto, for order directing that, in cases where demurrage is charged on cars placed on public or private sidings and such charges are deemed by shipper or consignee to be unreasonable, such shipper pay charges under protest and may, within 10 days appeal to Board, which shall determine such appeal, and if charges found unreasonable, issue order directing carrier to refund amount.

26060. May 1. Authorizing G.T.R. to rebuild bridge 32—Maitland River viaduct—over Maitland River at Wingham, Ont.

26061. May 1.—Ordering Great Northern Ry. to stop train 355 on flag at Crescent, B.C., during months that campers' special train is not in service.

26062. Apr. 30.—Authorizing C.P.R. to build spur for Hunt Bros. Ltd., London, Ont.

26063. Apr. 30.—Authorizing Grand Trunk Pacific Ry. to build spur, across highway at Duffield, Alta.

26064. May 2.—Authorizing Canadian Northern Ontario Ry. to build siding across Dundas St., Deseronto, Ont.

26065. May 1.—Authorizing Michigan Central Rd. to build spur for American Cyanimid Co., near Niagara Falls, Ont.; and approving clearances.

26066. May 1.—Approving agreement between Bell Telephone Co. and Muskrat Lake Telephone Co., Renfrew County, Ont., Aug. 25, 1915.

26067 to 26069. May 3.—Approving location of C.P.R. stations at Hazelridge, Man.; Richardson, Sask., and Hatton, Sask., according to standard A2 station plan.

26070. May 2. Dismissing complaint of Toronto Board of Trade against assessment of demurrage at Niagara frontier on cars containing Canadian grain for export through U.S. ports while awaiting Canadian Government inspection.

26071. May 2.—Ordering Grand Trunk Pacific Ry. to appoint station agent at Huxley, Alta., by Aug. 15.

26072. May 3.—Dismissing C.P.R. application for authority to make road diversion in s. e. ¼ 13-7-32, w. p. m., Sask., to easterly limit of Redvers station grounds, at grade, across its tracks, and approving crossing to elevators on south side of right of way at Redvers, Sask.; C.P.R. to place a gate in fence at south side of its right of way.

26073. May 1.—Approving revision of C.P.R. North Toronto Branch, as shown on plan; and authorizing C.P.R. to build double track over G.T.R. Toronto Belt Line, at grade, across Todmorden Road, York Tp., and Maclennan and Summerhill Aves., Toronto; an open space 12 by 12 ft. to be left in bridges over ravines so persons at bottom can get from one side of railway property to other; and proper opening also to be left in bridge over eastern ravine for Toronto Belt Line track.

26074. May 3. Ordering C.P.R. to provide portable station building and dismantled box car body, temporarily, at Travers, Alta, to take care of perishable freight and express; standard class A2 station to be erected by Aug. 1, 1918.

26075. May 7.—Approving C.P.R. plan showing layout of interlocking plant to be installed at Donlands where Canadian Northern Ontario Ry. connects with C.P.R.

26076. May 3.—Relieving Vancouver, Victoria & Eastern Ry. and Navigation Co. (G.N.R.) to erecting fences, gates and cattleguards at certain points between mileage 201.84 and 215.37; and from fencing station grounds at Princton and Coalmount, B.C.

26077. May 2.—Ordering G.T.R. to extend train now running from Brantford to Tilsonburg, Ont., arriving Tilsonburg at 6.50 p.m., through to St. Thomas, return to Tilsonburg Jct., and there connect with train from Hamilton, as at present arranged; service to be shown in new summer timetable and continued for three months as trial.

26078. May 7.—Ordering C.P.R. to appoint station agent at Dalroy, Alta., during Sept., Oct., Nov. and Dec. each year.

26079. May 4.—Authorizing C.P.R. to rebuild bridge over its track in line with Notre Dame St., Montreal, Que.; cost to be paid ¾ by C.P.R. and ¼ by Montreal Tramways Co.

26080. May 4.—Extending for one month from date time within which C.P.R. shall install bell at Duke St., Guelph, Ont.

26081. May 3.—Approving revised location of Toronto, Niagara & Western Ry. through Toronto Tp., Co. Peel, mileage 11.08 to 19.79 from Yonge St., Toronto.

26082. May 5.—Authorizing Vancouver, Victoria & Eastern Ry. and Navigation Co. (G.N.F.) to operate extension of spur to Campbell River Lumber Co., Ltd., at White Rock, B.C., and approving clearances.

26083. May 7.—Authorizing Canadian Northern Ry. to remove spur built for McKenzie-Ellis-Wood Co., Prince Albert, Sask.

26084. May 7.—Authorizing Canadian Northern Ry., at expense of Lomond Municipality 37, Sask., to make highway crossing over its track between s. e. and s. w. ¼ sec. 21-5-13, w. ½ m.

26085. May 7.—Authorizing Canadian Northern Alberta Ry. to cross and divert highway between Secs. 25 and 26-53-8, w. 5. m., by carrying highway over railway overhead bridge, at mileage 75. Tollerton Subdivision, Alta.

26086. April 30. Authorizing town of Montreal South, Que., to build highway crossings over Quebec, Montreal & Southern Ry. at Lasalle and Marmier Aves. and St. Helene Boulevard.

26087. May 3.—Dismissing W. E. Mace's complaint against change in Bell Telephone's Service at Warrington Apartments, Ottawa, Ont.

26088. May 5.—Ordering C.P.R. to erect station at Mud Lake, Ont., and to build spur to accommodate two or three cars for pulpwood there; work to be completed by July 31, and rescinding order 25069, June 14, 1916.

26089. May 8.—Amending order 25709, Dec. 2, 1916, requiring re Canadian Northern Quebec Ry. service between St. Jerome and Montreal.

26090. May 8.—Amending order 25975, Mar. 29, re express delivery and collection limits in Toronto.

26091. May 8.—Rescinding order 25322, Aug. 30, 1916, suspending C. P. R. tariff, C. R. C. no. E-3176, and Temiscouata Ry. tariff, C.R.C. 256; provided rates in said tariffs, where higher, be reduced to St. John, 8th class basis from stations shown therein on C.P.R. and Temiscouata Ry.

26092. May 10.—Extending to Dec. 31, time within which G.T.R. may improve its freight facilities at Windsor, Ont., as required by order no. 25487, Oct. 2, 1916.

26093. May 10.—Authorizing C.P.R. to rebuild interlocking plant at crossing of G.T.R. at St. Polycarpe Jct., mileage 35.41, Smiths Falls subdivision.

26094. May 8.—Authorizing Michigan Central Rd. to build spur in Stamford Tp., Ont., connecting with tracks of Hydro-Electric Power Commission of Ontario.

26095. May 8.—Approving Canadian Northern Ry. drawing 25578, April 1, showing new standard timber cattle pass, size 5 x 6 ft.

26096. May 8.—Authorizing Pere Marquette Ry. to build highway over its tracks on east side Lot 3, Con. 2, Mersea Tp., Ont.; cost of construction and maintenance to be paid by Public School Board of Sec. southwest of township.

26097. May 8.—Authorizing Canadian Northern Ry. to extend siding on n.w. ¼ Sec. 10 and s.w. ¼ Sec. 15 Tp. 17 R., west of Principal Meridian 7, across highway.

26098. May 10.—Approving G.T.R. plan showing substructure for bridge 56, milepost 34.67 from Port Dover, Ont., clearance between abutments to be 24 ft.

26099. May 10.—Extending to July 1 time within which Canadian Northern Ry. shall complete spur for McKellar Bedding Co., Fort William, Ont., authorized by order 22261, July 23, 1914.

26100. May 10.—Authorizing C.P.R. to connect with Regal Collieries Co.'s spur at Taber, Alta.

26101. May 11.—Ordering Pere Marquette Ry., from May 14, to restore its train service between Sarnia and St. Thomas, Ont.

26102. April 20.—Dismissing Plymouth Cordage Co.'s complaint against rates on binder twine, in carloads, from Welland, Ont., to points east of Toronto, to and including Kingston and Smiths Falls, Ont.

26103. May 11.—Authorizing Saskatchewan Government to build highway over Canadian Northern Ry. in s.w. ¼ sec 6, Tp. 29 R., 30, west of Principal Meridian.

26104. May 11.—Authorizing G.T.R. to build spur for Flavelles, Ltd., Lindsay, Ont.

26105. May 11.—Ordering G.T.R. and C.P.R. each to install improved type of automatic bell at Dufferin St., Weston, Ont. 20% of cost to be paid out of railway grade crossing fund and bells be installed by Sept. 1.

26106. May 11.—Authorizing Canadian Northern Ontario Ry. to take portions of Lot 6, Con. 3, east of Yonge St., York Tp., Ont., property of J. R., E. H., and J. W. Watson, required to accommodate slopes of farm crossing, at grade, an off-take ditch for maintaining existing drainage; to build farm crossing, at grade.

26107. May 11.—Extending to Dec. 1, time within which Lake Erie & Northern Ry. may operate its cars over crossing of G.T.R. at station 7-23, Brantford, Ont., pending installation of interlocking plant required by order 22116, July 2, 1914; crossing to be protected by watchmen appointed and paid by L. E. & N. Ry.

26108. May 11.—Extending to June 1, time within which C.P.R. shall install bell at highway at Campbellville station, Ont.

26109. May 8.—Ordering G. T. R. to build siding for Fletcher Pulp & Lumber Co.'s plant at Sherbrooke, Que., old spur two miles farther north to be removed.

26110. May 14.—Ordering G.T.R. within 60 days to install bell at Sealy St., Casselman, Ont., 20% of cost to be paid out of railway grade crossing fund.

26111, 26112. May 14.—Ordering Michigan Central Rd. to keep cars that may be standing on sidings crossing Hornby St. and East St., Springfield, Ont., back 100 ft. from street line; put up posts to mark the zones.

26113. May 12.—Authorizing Quebec & Lake St. John Ry. to build siding for Turner Lumber & Pulpwood Co., Limoilou, Que.

26114. May 16.—Approving agreement between Bell Telephone Co. and Lavant-Dalhousie Telephone Association, operating in Lanark County, Ont., Aug. 20, 1915.

26115. May 16.—Authorizing C.P.R. to build passing siding, at grade, across road allowance between Lots 8 and 9, Con. B, Haldimand Tp., Ont.

26116. May 16—Dismissing complaints of Regina Board of Trade and H. G. Smith, Ltd., Regina, Sask., against increased freight rates on canned goods and dried fruits, effective Mar. 1, from Pacific Coast points to Regina.

26117. May 16.—Ordering Grand Trunk Pacific Ry. and C.P.R., as long as they can continue to do so and as long as emergency exists, to supply cars at rate of 75 and 50 a day, respectively, to Canadian Northern Ry., ata transfer at Saskatoon; cars to be taken into Goose Lake District by C.N.R., loaded and returned to G.T.P.R. and C.P.R. at Saskatoon for furtherance to elevators at head of the lakes. Through rate for joint carriage of said grain to be rates published and filed by C.N.R. for carriage of grain over its own rails, or jointly with its eastern connections as so published, east of Saskatoon, from points of shipment to same destinations; allocation of said joint rates between carriers hereby made parties thereto be arranged between themselves within one week from date or, failing such, to be settled by Board.

26118. May 16.—Approving plan and specifications showing work to be done on no. 1 drain, under C.P.R. in Lot 125, Con. 6, Bayham Tp., Ont.

26119. May 15.—Authorizing Grand Trunk Pacific Ry. to build spur for Edmonton Cement Co., in n.w. ¼ Sec. 35, Tp. 45, R. 1, west of 6th Meridian and s.w. ¼ Sec. 2, Tp. 46, R. 1, west of 6th Meridian.

26120. May 11.—Approving agreement between Bell Telephone Co. and The Admaston Rural Telephone Association, Ltd., operating in Renfrew County, Ont., April 30.

26121. May 16.—Amending order 26034, Apr. 16, authorizing Algoma Eastern Ry. to charge interswitching rate of 1c per 100 lbs. (C.R.C. 169), and amending Supplement 2 to Algoma Eastern Ry. Tariff C. R. C. 169.

26122. May 16.—Approving Maine Central Rd. bylaw, May 9; and rescinding order 25522, Oct. 10, 1916, approving bylaw passed Sept. 13, 1916.

26123. May 18.—Extending to Dec. 1 time limited by orders 23727, 24387, and 25804, respectively, May 22, and Nov. 2, 1915, May 29, 1916, and Jan. 17, 1917, during which Lake Erie & Northern Ry., pending installation of such interlocking plant, may operate cars and trains over crossing of Toronto, Hamilton & Buffalo Ry. in Brantford, Ont.; crossing to be protected by watchman, appointed and paid by L. E. & N. Ry.

26124. May 18.—Extending to July 15, time within which Great North Western Telegraph Co. place its wires on King and William Sts., Chatham, Ont., in underground conduits and remove poles on said streets.

26125. May 18.—Amending order 26076, May 3, 1913, re Vancouver, Victoria & Eastern Ry. and Navigation Co.'s fences, gates and cattle guards at certain points in B.C.

26126. May 18.—Authorizing G.T.R. to build siding and spur therefrom, for John Inglis & Co., Ltd., Toronto.

26127. May 21.—Approving revised location of Canadian Northern Ry., MacRorie Westerly Branch, west of Alsask, Sask.

26128. May 19.—Approving Western Canada Telephone Co.'s Tariff, C.R.C. 1, covering rentals and charges for service within rural exchange of Belmont, B.C.

Canadian Railway Rails for Use in France.

A Dominion order in Council passed Dec. 19, 1916, gave authority under certain conditions for the shipment of certain trackage from Canadian railways to France for war purposes. Under that order 800 miles of rails with the necessary turnouts, angle bars, bolts, spikes, and other track material were taken up from the Eastern Division of the National Transcontinental Ry. and shipped. Another request was received from the British Government recently for a further 300 miles of rails and accessories. The acting Minister of Railways referred the matter to the Chief Railway Commissioner, who recommended that the further 300 miles of rails be obtained from the Grand Trunk Pacific Ry., partly from the portion of the line running through the Yellowhead Pass, which closely parallels the Canadian Northern Ry., and partly from some other main track line at other points, this latter track to be replaced by other rails. An order in Council was therefore passed, under the provisions of Sec. 6 of the War Measures Act, 1914, providing as follows:

The Minister of Railways may order the G. T. Pacific Ry. to take up and deliver to him such portions of its line running through the Yellowhead Pass as may be specified by the Chief Railway Commissioner, and to deliver such other rails and track material belonging to the company as may be specified by the Chief Commissioner; and the Minister shall have the power either to relay with other rails the trackage taken up, or in lieu thereof, to grant running rights over other railways. The Minister shall have power, on the recommendation of the Chief Railway Commissioner, to take duplicate trackage belonging to any railway company in Canada for the purpose of laying all or any part of the trackage taken from the G. T. P. Ry. The Chief Railway Commissioner shall have power to compel railway companies in Canada to supply equipment for the transportation of rails in case of a shortage on the carrying line, on such terms as the Board of Railway Commissioners may order, the power to include the right not only of ordering the supplying of cars, but of locomotives to be used in the transportation of these rails to the seaboard, although the transportation takes place over a line other than the line required to supply the equipment. The Board of Railway Commissioners shall have power to give to the company whose tracks and sidings have been taken up under authority of these regulations, or whose rails, ties, and other track materials have been taken hereunder, running rights over the railway lines and sidings of the other railway companies, upon such terms and conditions as the Board may deem just and proper. All cost, damages, and expenses under this order shall be borne by His Majesty's Government in England.

In pursuance of the authority conferred upon him by the order in council the acting Minister of Railways, on May 7, issued an order to the Grand Trunk Pacific Ry., to take up and deliver to A. Ferguson, C.E., Inspecting Engineer of the Railways Department, the rails and track material, except the ties, of the line through the Yellowhead Pass, extending from near Imrie, on the east to near Resplendent on the west, which mileage had been specified to be taken up, by the Chief Railway Commissioner. The acting Minister of Railways also granted to the G.T.P. Ry. running rights over the Canadian Northern Pacific Ry., between the points above specified, subject to terms and conditions to be determined by the Board of Railway Commissioners.

The distance between Imrie, Alta., and Resplendent, B.C., according to the company's timetables is 207 miles, but the actual mileage to be taken up under the order may be more or less, according as engineers decide the most feasible points to make the connections between the two companies' lines so that the G. T. P. Ry. may exercise its running powers over the C. N. P. R. We are advised that connections will also be made with the C. N. P. R. to give any collieries in the district, which may now be shipping over the G. T. P. R. a connection with the C. N. P. R.

Residents of Edson, Alta., a G.T.P.R. division point, 129.3 miles west of Edmonton, protested against the rails of that section being taken up, and another order was then issued, providing for taking up some rails on the G.T.P.R. and others on the C.N.R., the latter to be laid on G.T.P.R. track to replace the ones taken up therefrom, and the sections of either line within the territory where they closely parallel each other and which are left intact for operation, to be used jointly by both lines. A lot of negotiations have been going on between the Railways Department and G.T.P.R. and C.N.R. officials, but at the time of writing, May 29, it is impossible to say definitely what will be done, further than that the taking up of rails on the G.T.P.R. has been commenced from Resplendent easterly. D. B. Hanna, Third Vice President, and M. H. MacLeod, General Manager and Chief Engineer, C.N.R., went over the company's whole main line from Vancouver to Toronto recently, and paid particular attention to the question of release of rails in the Yellowhead Pass District. Subsequently they visited Ottawa, and at the time of writing, May 29, Mr. MacLeod is still there in connection with the matter. Sir Henry Drayton, Chief Railway Commissioner, left Ottawa, May 26, for the west, to look into the situation on the spot.

Freight and Passenger Traffic Notes.

The Canadian Pacific Ry. started its upper lakes steamship service between Port McNicoll and Fort William, Ont., May 15.

The usual Saturday to Monday cheap tickets are being issued by the Canadian Pacific Ry., the Grand Trunk Ry., and the Canadian Northern Ry.

The first freight shipped from the east via lake and rail route reached Winnipeg, May 7, by the National Transcontinental Ry. from Fort William.

The Canadian Pacific Ry. has arranged a daily train and boat service in the Okanagan Lakes territory instead of the present six days a week service.

There will be no holiday nor excursion rates given by Canadian railways for the present, and no special trains, except those required for military purposes, will be run.

The Canadian Government Railways have restored the train and ferry service between the South Shore and Murray Bay, Que., which it was recently reported had been suspended.

The New York Central Rd. (formerly Lake Shore and Michigan Southern Rd), passenger trains now arrive at and depart from the Michigan Central terminal at Detroit, Mich., instead of at the Brush St. terminal.

Business men of Rexton, Richibucto, and other points on the Kent Northern Ry., are urging the New Brunswick Government to consider the rates charged for freight on the line, which are alleged to be excessive, and to take steps to have them reduced.

The Grand Trunk Ry. started operating its drawing room sleeping cars from Toronto to Algonquin Park and Madawaska, Ont., Thursday, May 10, and on each succeeding Thursday, at 10.45 p.m., and from Madawaska for Toronto, at 6 a.m. on Tuesday, May 15, and each succeeding Tuesday.

A Vancouver press dispatch of May 14, said the new Great Northern Ry., and Northern Pacific Ry. terminal station, at False Creek, Vancouver, would be opened June 1, that there would be a public reception in the new building from 2 to 4 p.m., and that at the latter hour the first train would be dispatched from the station to Seattle, Wash.

Mainly About Railway People Throughout Canada.

Mrs. W. D. Matthews, wife of W. D. Matthews, director, C.P.R., died at Toronto, May 15.

E. B. Greenshields, who died at Montreal recently, was a director of the Grand Trunk Pacific Ry. Co.

W. M. Macpherson, director, Grand Trunk Pacific Ry., returned to Canada, May 14, after a lengthened visit to England.

A. W. Smithers, Chairman, G.T.R. Co., arrived in Canada, May 14, from London, Eng., accompanied by **H. Deer,** Assistant Secretary.

V. T. Boughton, Resident Engineer, C. P. R., Sudbury, Ont., ha senlisted with the 1st Regiment, Reserve Engineers, United States Army.

Howard Elliott, President, New York, New Haven & Hartford Rd., has resigned, and has been succeeded by Edward J. Pearson, Vice President.

Geo. Stanway Mitchell, the nine year old son of Lorne W. Mitchell, Treasurer, Canadian Northern Ry., died in Toronto April 29, after less than an hour's illness.

G. McLaren Brown, European Manager, C.P.R., London, Eng., entertained the Canadian pressmen in London at the Newspaper Press Fund dinner there, May 12.

W. S. Miller, Travelling Passenger Agent, G.T.R., Montreal, was presented with a cabinet of silver by a number of his friends, May 5, in connection with his marriage.

F. A. Bradley, who has been appointed Contracting Foreign Freight Agent, Union Pacific Ry., New York, former lived in Ottawa, where he was at one time a page in the House of Commons.

A. Chapman, train dispatcher, C.P.R., London, Ont., was appointed general chairman of the Order of Railroad Telegraphers of Canada, at the international convention held at Seattle, Wash., in May.

Anton Balzola, President and Secretary-Treasurer, Niagara Spanish Aerial Car Tramway Co., which built and operates an aerial car line over the whirlpool at Niagara Falls, died suddenly at Niagara Falls, Ont., May 21.

J. R. C. Macredie, M.Can.Soc.C.E., of whom some biographical details were given in our last issue, was appointed Engineer, Saskatchewan District, C.P.R., at Moose Jaw, Sask., recently, and not Resident Engineer, as inadvertently stated.

J. A. Dundas, Secretary to Vice President Ogden, C.P.R., was presented with a cabinet of silver and a purse of money, May 5, by a number of the office staff and other employes, on the occasion of his marriage.

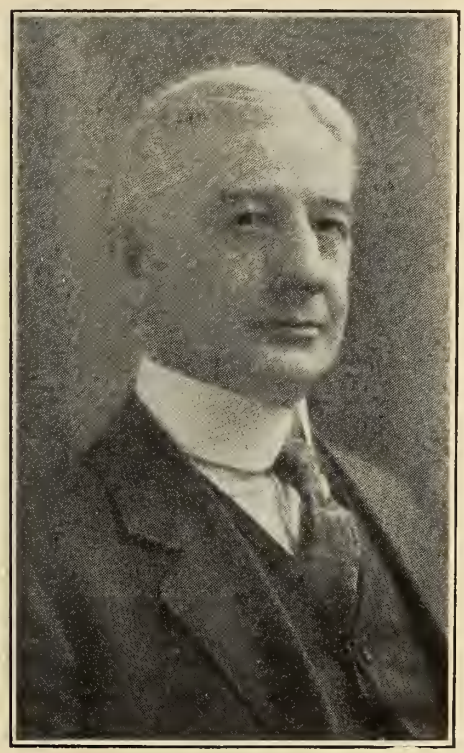
D. Pottinger, I.S.O., formerly Chairman, Canadian Government Railways Managing Board, with Mrs. Pottinger, were the guests of Sir Collingwood and Lady Schreiber, at Ottawa, during May, after which they went to their summer home at Shediac, N.B.

L. C. Fritch, General Manager, Eastern Lines, Canadian Northern Ry., Toronto, and **E. H. Fritch,** Secretary, American Railway Engineering Association, Chicago, Ill., received information, May 2, of the sudden death of their father, Joseph Fritch, on that date.

H. K. Wicksteed, B.A.Sc., M.Can.Soc.C.E., Chief Engineer of Surveys, Mackenzie, Mann & Co., Ltd., addressed the Canadian Society of Civil Engineers, Toronto branch, on May 8, on Venezuela and the islands of the Carribean Sea, illustrating it by a number of excellent views which he secured during his various trips to the south.

G. A. Stewart, M.Can.Soc.C.E., who died at Victoria, B.C., May 13, aged 87, was engaged on the construction of some of the early railways in the Dominion. He was Assistant Engineer on the Northern Ry., from 1852 to 1854; Chief Engineer, Midland Ry., from 1868 to 1877; practising as a civil engineer in the interval. He retired from active service several years ago, and lived at Victoria since 1909.

Frank H. Alfred, who has been elected President of the reorganized Pere Marquette Ry., began railway work as a rodman on the construction of the Columbus, Lima & Milwaukee Ry. in 1887. After being employed on the Norfolk & Western Ry., the Cleveland, Akron & Columbus Ry., and the Wheeling & Lake Erie Ry., he became Assistant Engineer of the Pere Marquette Ry in 1900. He was made Chief Engineer in Oct., 1902, resigning on Oct. 1, 1905, to become manager of the Canadian White Co., Ltd., in Montreal. In 1908 he returned to railway service as Assistant to the President of the Cincinnati, Hamilton & Dayton Ry. In Apr., 1912, he was appointed Assistant General Manager of the Pere Marquette Ry., being made General Manager later, and then chief executive officer for the receivers, which position he held at the time of his recent promotion.



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F. F. Backus,
General Manager, Toronto, Hamilton & Buffalo Railway.

D. A. Story, who is said to have been appointed General Traffic Manager, Canadian Government Rys., Moncton, N.B., was born at Halifax, N.S., Oct. 26, 1853, and entered railway service, May 26, 1869, since when he has been successively, clerk in Audit Department, telegraph auditor, train dispatcher, and secretary to Superintendent, Nova Scotia Ry., Halifax, N.S. After the taking over of the Nova Scotia Ry. by the Government as a part of the Intercolonial Ry., he was clerk in the General Freight Agent's office, Moncton, N.B., and, later, freight agent and accountant, Halifax station, N.S.; from July 1, 1894, to Oct. 19, 1898, he was acting agent, Halifax, N.S.; Oct. 19, 1898, to Sept. 1, 1907, Division Freight Agent, Northern Division; Sept., 1907, to June 1, 1917, General Freight Agent, Intercolonial Ry.

Ernest Baxter, who has been appointed General Storekeeper, Wabash Ry., St. Louis, Mo., was born at Delmer, Ont., Oct. 11, 1882, and entered railway service in Mar. 1903, since when he has been, to May 1903, messenger, Local Freight Office, Michigan Central Rd.; May to Oct. 1903, messenger, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont.; Oct. 1903 to April 1905, secretary to Superintendent, G.T.R., London, Ont.; April 1905 to Feb. 1906, consecutively, in Operating Department, Cincinnati, Hamilton & Dayton Rd., Indianapolis, Ind., same department, Missouri Pacific Ry., St. Louis, Mo.; Feb. 1906 to May 1909, secretary to General Manager, St. Louis Southwestern Ry., St. Louis, Mo.; May 1909 to June 1914, chief clerk to the President, same road; June 1914 to Feb. 1916, Purchasing Agent, same road; Mar. 1, 1916, to April 30, 1917, Service Inspector, Wabash Ry., St. Louis, Mo.

Frederick Fanning Backus, who has been appointed General Manager, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., was born at Rochester, N.Y., June 4, 1860, and entered transportation service, June 4, 1876, since when he has been, to 1887, with Merchants Despatch Transportation Co.; 1877 to 1881, clerk, Local Freight Office, New York Central & Hudson River Rd.; 1881 to 1883, chief clerk to General Northwestern Agent, Lehigh Valley Rd., Rochester, N.Y.; 1883 to 1885, Travelling Freight Agent, same road, Buffalo, N.Y.; 1885 to Oct., 1886, Assistant Claim Clerk, General Office, Blue Line (New York Central Fast Freight Line), Rochester, N.Y.; Oct., 1886, to Apr. 7, 1887, Assistant to General Agent, same line, Toronto; Apr. 7, 1887, to Dec., 1897, General Agent, same line, and Canada Southern Ry., Toronto; Dec. 1, 1897, to July 1, 1912, General Freight and Passenger Agent, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont.; July 1, 1912, to June 11, 1915, General Traffic Manager, same road, Hamilton, Ont.; June 11, 1915, to May 17, 1917, Assistant to President, same road, Hamilton, Ont.

Lafayette S. Brown, who is said to have been appointed Assistant to the General Superintendent, Intercolonial Division, Canadian Government Rys., Moncton, N.B., was born at Nelson, N.B., Oct. 19, 1864, and entered I.R.C. service, Jan. 15, 1880, since when he has been, to Dec. 20, 1881, cleaning locomotives, and machinist helper, Newcastle, N.B.; Dec. 20, 1881, to Sept. 5, 1882, shunting in Newcastle yard and learning telegraphy; Sept. 5, 1882, to Nov. 25, 1883, assistant agent, Newcastle, N.B.; Nov. 26, 1883, to Oct. 4, 1898, train dispatcher, Moncton and Ste. Flavie District, Campbellton, N.B.; Oct. 4, 1898, to Apr. 30, 1912, Chief Dispatcher, New Glasgow, N.S.; May 1, 1912, to July 31, 1913, Assistant Superintendent, Moncton and Ste. Flavie and Fredericton to Loggieville, N.B., Newcastle, N.B.; Aug. 1, 1913, to June 1, 1917, Superintendent, Truro, Sydney and Oxford District, Intercolonial Ry., latterly known as District

4, Intercolonial Division, Canadian Government Railways, New Glasgow, N.S.

C. A. Hayes, who has been appointed General Manager, Lines Quebec Bridge and easterly, Canadian Government Railways, Moncton, N.B., was born at West Springfield, Mass., Mar. 10, 1865, and entered railway service in 1882, since when he has been, to 1884, clerk, Freight Auditor's office, Connecticut River Rd., now Boston & Maine Rd.; 1884 to Oct., 1887, similar position, Boston & Lowell Ry., Boston, Mass.; Oct., 1887, to Nov., 1890, clerk, General Freight Agent's office, Boston & Lowell Ry., and its successor, Boston & Maine Rd.; Nov., 1890, to June, 1892, General Freight and Passenger Agent, Central New England & Western Ry., Poughkeepsie, N.Y.; June to Oct., 1892, Division Freight Agent, Philadelphia & Reading Rd., while it had control of the C.N.E. & W.R., Hartford, Conn.; Oct., 1892, to June, 1896, New England Agent, National Despatch Line, Boston, Mass.; June, 1896, to July, 1899, New England Agent and acting General Manager, National Despatch Line, Boston, Mass.; July, 1899, to May, 1903, Manager, National Despatch-Great Eastern Line, Buffalo, N.Y.; May, 1903, to Apr., 1908, Assistant General Freight Agent, G.T.R., Chicago, Ill.; Apr., 1908, to Oct. 16, 1911, General Freight Agent, G.T.R., Montreal; Oct. 16, 1911, to June, 1913, Freight Traffic Manager, G.T.R., Montreal; June, 1913, to June 1, 1917, Freight Traffic Manager, Canadian Government Railways, Moncton, N.B.

Frederick Passmore Gutelius, M.Can. Soc.C.E., was has resigned as General Manager, Canadian Government Railways, Moncton, N.B., on his appointment as Vice President, Delaware & Hudson Co., Albany, N.Y., was born at Mifflinburg, Pa., Dec. 21, 1864, and graduated from Lafayette College as civil engineer in 1887. He entered railway service in 1888, since when he has been, to 1892, Assistant Engineer and Assistant Supervisor, Pennsylvania Rd., Pittsburg, Pa.; 1885 to 1898, General Superintendent, Columbia & Western Ry.; 1898 to 1900, Superintendent, C.P.R., Nelson, B.C.; 1900 to 1902, in various positions in Engineering Department, C.P.R.; 1902 to Mar., 1906, Engineer Maintenance of Way, C.P.R., Montreal; Mar., 1906, to Sept. 15, 1908, Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal; Sept. 15, 1908, to Dec. 30, 1910, General Superintendent, Lake Superior Division, C.P.R., North Bay, Ont.; Dec. 30, 1910, to Jan., 1913, General Superintendent, Eastern Division, C.P.R., Montreal; Jan., 1912, to Apr. 30, 1913, one of the commissioners investigating expenditures and other matters in connection with the construction of the National Transcontinental Ry. On the abolition of the Government Railways Managing Board in May, 1913, he was appointed General Manager, Canadian Government Railways, with all powers usually vested in the executive of railway corporations, reporting to the Minister of Railways and Canals. The appointment was for a definite period of two years, and thereafter during the Minister's pleasure, at a salary of $20,000 a year. It is said that his position with the Delaware & Hudson Co. carries a salary of $25,000 a year.

John Duncan McNutt, appointed Inspector of Train Dispatching, Canadian Government Railways, Moncton, N.B., recently, was born at Stewiacke, N.S., Feb. 8, 1873, and entered Intercolonial Ry. service in 1889, since when he has been, to 1890, telegraph operator, Stewiacke, N.S.; 1890 to 1891, relieving agent; 1891 to 1893, operator in dispatcher's office, Truro, N.S.; 1893 to 1896, dispatcher, Truro, N.S.; 1896 to 1898, dispatcher, Moncton, N.B.; 1898 to 1900, dispatcher, New Glasgow, N.S.; 1900 to 1904, Chief Dispatcher, Sydney, N.S.; 1904 to 1906, Chief Dispatcher, Fredericton, N.B.; 1906 to 1909, Chief Dispatcher, Newcastle, N.B.; 1909 to Mar. 15, 1917, dispatcher, and acting Chief Dispatcher, Truro, N.S.

James E. Johnson, whose appointment as Division Engineer, Canada Division, Michigan Central Rd., St. Thomas, Ont., was announced in our last issue, was born at Tipton, Ind., Aug. 25, 1883, and entered railway service, Mar. 1, 1905, since when he has been, to June 1, 1905, rodman, Cincinnati, Hamilton & Dayton Ry., Hamilton, Ohio; June 1 to Nov. 1, 1905, rodman, Lake Shore & Michigan Southern Ry., Dunkirk, N.Y.; Nov. 1, 1905, to Aug. 1, 1906, assistant on construction, Vandalia Rd., Terre Haute, Ind.; Aug. 1, 1906, to Feb. 1, 1907, transit

F. P. Gutelius, M.Can.Soc.C.E.,
Vice President, Delaware and Hudson Company.

man, Missouri Pacific Ry., St. Louis, Mo.; Feb. 1, 1907, to Oct. 1, 1912, Division Engineer, Hocking Valley Ry., Logan, Ohio; Oct. 1, 1912, to Apr. 16, 1917, Division Engineer, Pere Marquette Rd., Saginaw, Mich.

Saskatchewan Branch Can. Soc. C. E.—The following officers and committee were elected at the organization meeting in Regina, May 10: Chairman, L. A. Thornton, City Commissioner, Regina; Vice Chairman, G. D. Mackie, Moose Jaw; Secretary, J. N. de Stein, Regina; Executive Committee; H. S. Carpenter, E. G. W. Montgomery, Regina; A. H. Dion, Moose Jaw Electric Ry.; C. J. Yorath, City Commissioner, Saskatoon; Prof. A. R. Greig, Saskatoon.

St. John Valley Ry. Directorate. — Owing to the recent change of government in New Brunswick, J. D. Palmer, Fredericton; F. W. Sumner, Moncton; R. O'Leary, Richibucto, and W. S. Fisher, St. John, have resigned as directors of the St. J. V., and the following directors have been appointed: Hon. W. P. Jones, Chairman and Chief Counsel; C. O. Foss, Chief Engineer; E. S. Carter, Secretary and Treasurer; Hon. W. E. Foster and Hon. C. W. Robinson.

Canadian Pacific Railway Construction, Betterments, Etc.

Ontario District. — A press report states that the company is about to erect a bridge of three 27 ft. spans over Buell's Creek, Brockville, Ont.

The Board of Railway Commissioners has approved the plans for a second track on the line from Leaside Jct. to North Toronto. The plans provide for the erection of two bridges across the North Rosedale ravines, and for level crossings at Summerhill, Maclennan, and Bayview Avenues and on Todmorden Road. The Canadian Northern Ry. will connect with this Leaside-North Toronto line, at the east end of the West Don viaduct, from which point to North Toronto station, and west to the end of the track elevation along the north of the city, the track will be operated jointly with the C.N.R.

A press report states that the company is about to erect a bridge of three 35 ft. steel spans over London St., at Windsor, Ont.

Saskatchewan District.—A bylaw is to be submitted to Regina ratepayers to provide $15,000, in addition to $32,000 already voted towards the construction of a subway, instead of an overhead bridge, at the Hamilton St. crossing of the C. P. R.

The Regina City Council has approved plans for the extension of a spur track through Lots 3 and 4 in order to connect with the main spur in Block 138, subject to the company being prepared to make any necessary changes should the other lots in the block be linked up.

The recently completed line between Assiniboia and Vanguard, Sask., will, it is reported, be opened for traffic early in June, when a train service will be operated from Moose Jaw through to Shaunavon, on the Weyburn-Lethbridge line. The district between Weybridge and Assiniboia will it is stated, be served by a train making the round trip between the two points daily. The report does not say what service will be given between Shaunavon and the Saskatchewan-Alberta boundary, to which point track has been laid.

Alberta District.—The City of Lethbridge has to the credit of the 13th St. Subway account $13,000 which it proposes to invest until such time as the C. P. R. is prepared to make the subway carry 4 tracks instead of the 2 now laid. The original plans provided for a subway carrying 4 tracks, but it was decided to lay only 2 tracks until traffic conditions warranted the additional trackage. (May, pg. 182).

Calgary Branch Can. Soc. Civil Engineers.—J. S. Dennis, Chief Commissioner of Colonization and Development, C.P.R., and President, Canadian Society of Civil Engineers, was the guest of honor at the annual dinner of the Calgary, Alta., branch, April 26. The event of the evening was the unveiling of an honor roll containing the names of the members of the branch who were absent on military service. It contains 19 names, representing one-third of the membership of the branch.

The Northwestern Elevator Co., Ltd., has been incorporated under the Ontario Companies Act, with $250,000 capital, and office at Fort William, to build, own and operate grain elevators, warehouses, etc., and to own and operate steam and other vessels, docks, wharves, railway rolling stock, and other transportation facilities.

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The British Columbia Institute of Civil Engineers has formed a branch in Vancouver, B.C. The original branch of the institute was formed some months ago in Victoria.

Canadian Northern Railway Construction, Betterments, Etc.

Ontario Division.—The connecting link between the C.N.R. Toronto-Sudbury line and the Leaside-North Toronto line at present under construction, will run from the station yard at Duncan to a connection with the C.P.R. near the east end of the West Don bridge, 2.2 miles. We are officially advised that the work has been nearly completed. The junction switches at Donlands have not yet been put in, and there is still some work to be done on one highway and several private crossings, also some ditching. Other completion work is in progress. The C.P.R. line from West Don to the eastern end of the North Toronto double track grade elevation, is to be made a double track line (see C. P. R. Betterments, etc., on another page) and will be used jointly. Angus Sinclair is the contractor for the C. N. R. work.

From the east end of the C.P.R. West Don bridge a line has been located to a junction with the company's Ottawa-Toronto line near Scarboro Village, 4 miles. The Board of Railway Commissioners has been asked to approve a revision of this route, which necessitates the alteration of the plans previously prepared for the building of a viaduct over the Don River. It is expected that work will be started on this piece of line as soon as possible after the revised plans are approved.

The company's yards and terminals at Leaside will adjoin those laid out by the C. P. R.

Western Lines.—M. H. MacLeod, General Manager and Chief Engineer Western Lines, is reported to have said or inferred at Vancouver, that the most important work to be carried out during this year would be the laying of an additional mileage of heavy rails on the main line between Winnipeg and Edmonton, in place of the present rails, which would be utilized elsewhere; the laying of track on the Oliver-St. Paul de Metis line, the completion of the Vancouver terminal, the completion and permanent opening of the ferry to Patricia Bay and the line into Victoria, and the laying of steel on the Victoria-Port Alberni line. If steel could be procured work would be gone on with on the branch from Kamloops into the Okanagan Valley.

We are officially advised that the company placed contracts for about 750,000 ties between Port Arthur and Warroad; for approximately 400,000 ties between Fort Frances and Duluth, for about 600,000 ties in the vicinity of Edmonton and west of that point, and for 200,000 ties in British Columbia. Owing to labor scarcity deliveries are slow coming in, and will fall short of the requisitions.

Central Division.—The Board of Railway Commissioners has refused the company's application for a change of levels in its subway at Water St., St. Boniface, Man. The principal reason given is that it would interfere with the Provencher Ave. bridge now under construction across the Red River, on the line of Water St., by the cities of St. Boniface and Winnipeg, the Board's Chief Engineer advising that it would not be safe to lower the grade of the west end and of the Provencher Ave. bridge. The substructure for four of the pieces is reported to be practically completed, and pier 5 and the approaches are reported to be well forward. The Dominion Bridge Co. is preparing to erect the superstructure.

Western Division.—Ballasting on the Goose Lake branch was resumed at the end of April, and it is expected to complete the work this season. There is considerable work to be done on the roadbed between McGee and Kindersley, Sask., and the heaviest ballasting work has to be done between Kindersley and Calgary, Alta. About 500 Chinese are reported to be engaged in the work.

A press report states that the bridge across the Sturgeon River, on the Oliver-St. Paul de Metis branch, Alta., has been completed and that track laying has been restarted.

Pacific Division.—It is reported that a regular ferry service has been started between Port Mann, on the Fraser River, and Patricia Bay on Vancouver Island, and that a train service is being operated from Patricia Bay to Victoria. Three trips are made a day between these points by a gasoline-electric car. (May, pg. 195).

Canadian Coal Fields, Ltd., has been incorporated under the Dominion Companies Act, with $10,000,000 capital and office at Toronto, to acquire and operate coal lands and other properties, and in connection therewith to own and operate steam and other vessels, wharves, docks, etc., tramways, aerial carriers and other shipping and handling facilities. The incorporators are, F. H. Phippen, K.C., A. J. Reid, K.C., R. H. M. Temple, W. Bowler and F. C. Allen, Toronto, all of whom are connected with the Canadian Northern Ry. legal department.

Railway Lands Patented.—Letters patent were issued during April in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres.
Calgary and Edmonton Ry.	1,436.15
Canadian Northern Ry.	160.00
Canadian Pacific Ry. roadbed and station grounds	8.70
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	3,511.66
Total	5,116.51

German Locomotives.—In a recent prize court case in England, an affidavit was read to the effect that from information in the British Government's hands, 8,000 locomotives were laid up at Essen alone during March, on account of wear and tear due to the scarcity of lubricating oils in Germany, or to the use of bad lubricants.

Grain Elevator for Port Stanley.—The London Railway Commission, operating the London and Port Stanley Ry., is reported to have issued instructions for the preparation of drawings of the pier and requisite lands for the erection of a grain elevator at Port Stanley, Ont.

Summer Excursions Banned.—At a meeting of the Eastern Canadian Passenger Association at Hamilton, Ont., May 8, it was decided that no summer excursions be run this year, as the locomotives and train crews are required for freight traffic.

The Canadian Northern Ry.'s Agricultural Department at Winnipeg has sent out flower seeds for planting at its stations. Arrangements are being made to supply vegetable seeds to the agents.

The Great North Western Telegraph Co. has opened offices at Beaumaris, Ont.; Vawn, Sask., and Rosebud, Alta., and has closed its offices at Dwight and Odessa, Ont.

The Canadian Pacific Ry. has issued a booklet describing the northwest country reached by its lines, for use in promoting immigration.

George Bury's Work in the War.

As stated in Canadian Railway and Marine World's last issue, George Bury, Vice President, C.P.R., returned to Canada, April 25, after being absent from Jan. 23, during which time he visited Russia as a member of the special British commission headed by Lord Milner. When Mr. Bury reached England, Lord Milner and the other members of the mission weer already in Russia, so he proceeded by rail to the north of Scotland, whence he was conveyed on a fast destroyer to Bergen, in Norway, going thence by rail to Petrograd, and being there during the revolution. He travelled over the principal Russian railways from Lapland to the Caucasus, accompanied by Russian Government railway officials, made a thorough inspection, and on his return to England, presented very comprehensive reports to the War Cabinet, for which he was warmly thanked in a letter from Mr. Lloyd George,

On his return to Montreal he stated in an interview, among other things: "There is no doubt whatever that after the war Russia will have to build several hundred thousand miles of railway. Canada has ten times more railway mileage per unit of population than has Russia. Then, again, Russia made the mistake of patterning her railway transportation after that of Europe rather than America. Traffic in Russia moves vast distances in great bulk. The country lends itself to low grades and easy curvature. If that great country is to achieve the destiny in store for her she will have to come to the large train and large car, because these two factors make for economical transportation, and economical transportation is essential if a producing country of wide distances is to hold her own in the markets of the world. Had Russia been equipped with railway transportation, say as in Canada, she would have been able to have played a much greater part in the war."

The selection of Mr. Bury to go to Russia, which was the personal act of Premier Lloyd George, was undoubtedly one of the greatest compliments ever paid to a Canadian railway official, and a recognition of the outstanding position he occupies as a transportation authority. Only a few days after his return to Montreal, he was invited by President Wilson to go to Washington, and while there he had conferences with the advisory committee of the Council for National Defence, and with the leading railway executive heads, at which he undoubtedly fully explained Russia's necessities from a railway standpoint. A few day later it was announced that President Wilson had decided to send a railway commission to Russia consisting of J. F. Stevens, of New York, former Chief Engineer of the Panama Canal, Chairman; W. L. Darling, of St. Paul, Chief Engineer of the Northern Pacific Ry.; Henry Miller, of St. Louis, former operating Vice President of the Wabash Ry.; George Gibbs, of Philadelphia, former Chief Mechanical Engineer of the Pennsylvania Rd.; and J. P. Griner, of Baltimore, Chief Consulting Engineer of the Baltimore & Ohio Rd. Before leaving the United States the commission arranged to furnish the Russian Government with a large amount of locomotives, railway cars and materials, based, no doubt, on Mr. Bury's report of the requirements.

When in New York, on his return trip from Washington, Mr. Bury said, in an interview, among other things: "I have heard unthinking people say that the U.S. railways might be found wanting. It must be remembered that there is no such vast movements of freight traffic anywhere in the world as on the American continent, and that when the people think as at war, rather than as at peace, and allow the American railways to take the action that is now followed in Europe, the American railways will be equal to any task. If the American railways were called upon to move large bodies of troops and supplied the same accommodation as in Europe, they would be in a position to move a vastly greater number in a shorter time. In Europe during war troops are moved in freight cars, when passenger equipment is not available.

"In Europe the passenger service has been curtailed, and the trains left on

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George Bury,
Vice President, Canadian Pacific Railway.

slowed up, and the running of fast freight trains discontinued. Canada and the United States will have to bend every effort to increase the food surpluses by extra production and saving. Large fleets of ships will have to be built to supply Europe with the necessary food. Troops will have to be raised, and a grave labor shortage will immediately materialize unless some means are taken to substitute women for men where the work will admit, and of placing the male population in employments of necessity to win the war; cutting off all frills until after the cause of humanity has been saved. The passenger service ought to be reduced and slowed up; and fast freight service replaced with full trains. This would result in an immense saving of fuel, oil and labor. By other reductions, essentials in times of peace, but non essentials in times of war, such as the closing of outside agencies, taking off freight and passenger canvassers, etc., etc., a number of men would be released for other services. Some of the other belligerent countries, probably through under estimation of the length of the war, or through their eagerness to raise a large army, drew men that could not be spared from essential employments, causing disruption, which made it necessary to return men from the front for transportation, mining and manufacturing. Some of these nations allowed their cars and locomotives to get out of repair, which has had unfortunate results.

"When the history of the war comes to be written, it will be found what effect efficient transportation has had on victories and how inefficient transportation has brought about dire defeats. You are to be congratulated in so quickly forming a central committee in Washington to deal with the major matters of transportation in the United States as a whole, with such an able chairman and executive. If supported by public opinion, they can quickly make the drastic moves necessary in this crisis."

Mr. Bury was accompanied throughout his European trip by W. H. Winterrowd, Assistant to the Chief Mechanical Engineer, C.P.R., who acted as his secretary.

New Publications Received.

Any of the books mentioned under this heading can be obtained through Canadian Railway and Marine World.

Railway Estimates, Design, Quantities and Costs, by F. Lavis, M.Am.Soc.C.E., member American Railway Engineer Association, special lecturer, railway engineering, Yale University. Cloth, 6 x 9 in., 607 pages; with numerous diagrams and plans. New York, McGraw Hill Book Co., 239 West 39th St. $5 net.

Railway Nationalization and the Average Citizen, by W. H. Moore. Cloth, 5 x 7½ ins.; 181 pages., Toronto, McClelland, Goodchild & Stewart. $1.35.

The Irresponsible Five, a new family compact. By W. H. Moore. 5 x 7 ins.; 67 pgs. Toronto: McClelland, Goodchild and Stewart. Cloth, 50c; paper, 35c.

Winnipeg Traffic Club.—The opening meeting of this newly organized club was held April 26, when an address was delivered by W. R. Ingram, Chairman of the Manufacturers' Association, and of the Industrial Bureau, upon the transportation end of business. The President of the club is S. W. Thomas, of the Allan Line; P. D. Dennison is the President, and G. W. Travis is Secretary. The club has about 350 members, and was organized to promote the several interests of transportation men and provide a central meeting place.

Rails for Canadian Government Railways.—Ottawa dispatch, May 16: Arrangements are being made whereby rails required for renewal purposes on the government lines, the Intercolonial and National Transcontinental, may be rolled in Canada. Negotiations are in progress with the Imperial Munitions Board to secure the release of the necessary steel. It is probable that some of the rails will be turned out at Sault Ste. Marie and others at Sydney, obviating the need of importation.

G. T. R. Track Maintenance.—A book of instructions regarding the work of maintaining the track at the highest standard of efficiency has been issued to G. T. R. maintenance of way employes by H. R. Safford, Chief Engineer. The duties of every class of men in the department having the safety of trains in charge are outlined and illustrated.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canada Steamship Lines, Ltd.—W. J. ROBINSON, heretofore District Freight Agent, Windsor, Ont., has been appointed District Passenger and Freight Agent, Hamilton, Ont.

P. J. PEER, heretofore chief clerk, Passenger Department, Hamilton, Ont., has been appointed City Passenger and Freight Agent, Hamilton, Ont.

J. J. LYNCH has been appointed General Agent, Windsor, Ont.

Canadian Government Railways.—On May 21 we were semi-officially advised from Ottawa that consequent on F. P. GUTELIUS' resignation, to become Vice President of the Delaware & Hudson Co., C. A. HAYES, General Traffic Manager, C.G.R., would be appointed to succeed him as General Manager; that D. A. STORY, General Freight Agent, would succeed Mr. Hayes; that J. K. McNEILLIE, General Superintendent at Moncton, would continue in charge of the Prince Edward Island Ry., the Intercolonial Ry. and the portion of the National Transcontinental Ry. east of the St. Lawrence River, that is, between Moncton and Levis; that F. P. BRADY, General Superintendent, at Cochrane, would continue in charge of the National Transcontinental Ry. west of the St. Lawrence River, and that L. S. BROWN, Superintendent at New Glasgow, N.S., would be appointed as Assistant to Mr. McNeillie. On May 28 we were officially advised from Ottawa that the Minister of Railways had appointed C. A. HAYES, General Manager, Canadian Government Railways, east of the St. Lawrence River, and of Quebec City and Bridge; that he had appointed F. P. BRADY, General Manager of the Canadian Government Railways west of the Quebec Bridge, including the Fort William Branch. Up to May 29, no circulars announcing any of these appointments were available.

J. A. EVERELL, heretofore Distrct Passenger Agent, C.G.R., Montreal, and Superintendent, Montmorency Diivsion, Quebec Ry., Light & Power Co., Quebec, Que., is now devoting his entire time to the Quebec & Saguenay Ry., with the title of Superintendent. Office, Quebec, Que.

T. SAMSON, whose appointment as Travelling Passenger Agent was announced in our April issue, has his headquarters at Quebec, and not at Montreal, as stated.

A. J. ROBERTS, heretofore District Master Mechanic, District 2, Transcontinental Division, Grant, Ont., has been appointed Locomotive Foreman, vice W. Hamilton, transferred.

W. H. ROACH, heretofore locomotive man, Grant, Ont., has been appointed District Master Mechanic, District 2, Transcontinental Division, vice A. J. Roberts, transferred. Office, Grant, Ont.

W. HAMILTON, heretofore Locomotive Foreman, Cochrane, Ont., has been appointed Locomotive Foreman, Armstrong, Ont.

Canadian Northern Ry.—G. EASSON and J. W. DIXON have been appointed Travelling Freight Agents, Toronto.

T. J. BURK, F. R. LOCHE and W. J. DUFFY have been appointed Contracting Freight Agents, Toronto.

R. C. GADSBY and R. M. LALOR have been appointed Travelling Passenger Agents, Toronto.

A. S. DAVIS has been appointed Soliciting Passenger Agent, Toronto.

G. A. GOULD has been appointed ticket agent, Toronto Union Station, vice R. R. Cooper.

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C. A. Hayes,
General Manager, Lines Quebec Bridge and easterly, Canadian Government Railways.

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F. P. Brady,
General Manager, Lines from Quebec Bridge westerly, Canadian Government Railways.

P. A. ROONEY has been appointed Travelling Passenger Agent, Winnipeg, vice B. Brown.

F. A. SHAW, heretofore Division Freight Agent, lines west of Ottawa and east of Port Arthur, Ont., Toronto, has been appointed General Agent, Freight and Passenger Departments, Detroit, Mich. Office, Majestic Building.

R. LOGAN has been appointed Travelling Agent, Detroit, Mich.

J. F. MONGAN has been appointed chief clerk, Detroit, Mich.

T. F. CARTHY has been appointed chief clerk, Chicago, Ill.

S. C. CORFIELD has been appointed Contracting Agent, Pittsburg, Pa.

Canadian Pacific Ry.—R. U. PARKER, General Passenger Agent, Dominion Atlantic Ry., Kentville, N.S., has also been appointed Assistant District Passenger Agent, C.P.R., Halifax, N.S., reporting to N. R. DesBrisay, District Passenger Agent, St. John, N.B. Office, 117 Hollis St., Halifax.

A. O. WOLFF, Resident Engineer, Chapleau, Ont., is reported to have been appointed Resident Engineer, Brownville Jct., Me., vice N. E. Gutelius transferred.

E. BOWIE, heretofore Locomotive Foreman, Sherbrooke, Que., has been appointed Locomotive Foreman, Smiths Falls, Ont., vice C. A. Wheeler, promoted.

C. L. LEIGHTY, heretofore Inspector of Transportation, Eastern Lines, Montreal, has been appointed Superintendent of Telegraph, Ontario District, vice H. J. Lillie, appointed chief operator. Office, Toronto.

N. E. GUTELIUS, heretofore Resident Engineer, Brownville Jct., Me., has been appointed Resident Engineer, Sudbury, Ont., vice V. T. Boughton, enlisted for active service.

C. A. WHEELER, heretofore Locomotive Foreman, Smiths Falls, Ont., has been appointed General Locomotive Foreman, North Bay, Ont., vice W. Wells, promoted.

T. HAMBLY, heretofore Division Master Mechanic, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed acting Master Mechanic, Algoma District, vice J. H. Mills, resigned. Office, North Bay, Ont.

W. WELLS, heretofore General Locomotive Foreman, North Bay, Ont., has been appointed Division Master Mechanic, Sudbury Division, Algoma District, vice T. Hambly, transferred. Office, Sudbury, Ont.

J. R. C. MACREDIE, M.Can.Soc.C.E., heretofore Resident Engineer, Connaught Tunnel, has been appointed Engineer, Saskatchewan District, with office at Moose Jaw, and not Resident Engineer there, as inadvertently stated in a recent issue.

W. G. McPHERSON, heretofore General Foreman, Moose Jaw, Sask., has been appointed Division Master Mechanic, Saskatchewan District, vice S. W. Falkins, transferred. Office, Regina.

F. C. JOHNSON, heretofore Night Locomotive Foreman, Moose Jaw, Sask., has been appointed General Foreman there, vice W. G. McPherson, promoted.

J. H. SCOTT, heretofore Chief Dispatcher, Saskatoon, Sask., has been appointed Car Service Agent, Alberta District. Office, Calgary.

J. YORSTON, heretofore of the construction department, has been appointed Resident Engineer, Lethbridge, Alta., vice E. B. Skeels, resigned.

H. M. SMITH, heretofore Trainmaster, Medicine Hat, Alta., has been appointed Trainmaster, MacLeod, Alta., vice W. E. Cline, transferred.

W. E. CLINE, heretofore Trainmaster, MacLeod, Alta., has been appointed

Trainmaster, Medicine Hat, Alta., vice H. M. Smith, transferred.

Delaware & Hudson Co.—C. S. SIMS, heretofore Vice President, Albany, N.Y., has been appointed Resident Vice President, Montreal.

F. P. GUTELIUS, heretofore General Manager, Canadian Government Railways, Moncton, N.B., has been appointed Vice President in charge of Operating and Traffic Departments, D. & H. Co., vice C. S. Sims, transferred. Office, Albany, N.Y.

Grand Trunk Pacific Ry.—The following station agents have been appointed: Zelma, Sask., D. J. Harnett; Lewvan, Sask., H. House; Gilroy, Sask., E. Briggs; Dodsland, Sask., W. G. M. Corregan; New Norway, Alta., J. W. McGhee.

Grand Trunk Ry.—H. A. CARSON has been appointed City Freight Agent, Montreal, vice A. E. Clare, resigned.

G. PYE, heretofore Road Foreman of Locomotives, Ottawa Division, Ottawa, has been appointed General Foreman, Motive Power House, Ottawa, vice D. J. McCuaig, whose appointment as Master Mechanic, Ontario Lines, Toronto, was announced in a recent issue.

L. I. STONE, heretofore Assistant Engineer, London, Ont., has been appointed Assistant Engineer, Toronto.

W. R. FRASER has been appointed Aissistant Engineer, Allandale, Ont., vice W. G. Swartz, transferred.

C. S. COINE has been appointed Assistant Engineer, London, Ont., vice L. I. Stone, transferred.

The following station agents have been apopinted: Windsor Mills, Que., J. A. Leroche; Hoards, Ont., W. D. Locke; Utterson, Ont., A. M. Clarke; Parkdale, Ont., F. A. Bamber; Paris Jct., Ont., H. G. Simmons; London East, Ont., J. Gilpin; Pinkerton, Ont., F. F. Phillips; Barrys Bay, Ont., F. Folkard; Whitney, Ont., A. W. Simpson.

Great Northern Ry.—E. C. LEWIS has been appointed Freight Claim Agent, vice G. W. Perry, resigned. Office, St. Paul, Minn.

Lehigh Valley Rd.—T. J. HENNESSEY, heretofore Soliciting Freight Agent, Toronto, has been appointed Soliciting Freight Agent, Chicago, Ill.

V. A. FRADENBURG, heretofore chief clerk to Canadian Freight Agent, Toronto, has been appointed Soliciting Freight Agent, Toronto, vice T. J. Hennessey, transferred.

Michigan Central Rd.—A. G. OLDRIEVE, heretofore in the St. Thomas shops, has been appointed Roundhouse Foreman, Montrose, Ont., vice J. R. Sands, transferred.

J. R. SANDS, heretofore Roundhouse Foreman, Montrose, Ont., has been appointed Roundhouse Foreman, Windsor, Ont., vice J. Farrell, who has been granted leave of absence through illness.

New York Central Rd.—D. W. DINAN, heretofore Superintendent, Mohawk Division, Albany, N.Y., has been appointed General Superintendent, 2nd District, Buffalo, N.Y., vice C. Christie.

D. L. SOMMERVILLE, heretofore Superintendent, St. Lawrence Division, Watertown, N.Y., has been appointed Superintendent, Mohawk Division, Albany, N.Y., vice D. W. Dinan, promoted.

H. SCOTT has been appointed Superintendent, Ontario Division, Oswego, N.Y., vice J. W. Evans.

L. S. EMERY has been appointed Superintendent, St. Lawrence Division, Watertown, N.Y., vice D. L. Sommerville, transferred.

Pere Marquette Ry.—Under the recent reorganization, the name of the company has been changed from Pere Marquette Rd. to Pere Marquette Ry., and the following organization:

E. N. BROWN, Chairman of the Board. Office, New York.

F. H. ALFRED, heretofore General Manager for the Receivers, President and General Manager. Office, Detroit, Mich.

J. L. CRAMER, heretofore Comptroller for the Receivers, Secretary and Treasurer. Office, Detroit, Mich.

A. E. BADGER, Assistant to the President and General Manager, Detroit, Mich.

A. L. GRANDY, heretofore Chief Engineer, Assistant General Manager, Detroit, Mich.

H. O. HALSTEAD, heretofore Superintendent of Transportation, General Superintendent, Detroit, Mich.

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L. S. Brown,
Assistant to General Superintendent, Intercolonial Division, Canadian Government Railways.

E. M. HEBERD, Assistant Secretary, New York.

J. TUTHILL, Chief Engineer, vice A. L. Grandy, promoted, Detroit, Mich.

C. S. SHELDON, Engineer of Bridges and Buildings, Detroit, Mich.

J. L. HAYES, heretofore Superintendent, Port Huron-Grand Rapids Division, Saginaw, Mich., Superintendent, Toledo-Ludington Division, vice A. R. Merrick, Saginaw, Mich.

J. A. ANDERSON, Superintendent, Port Huron-Grand Rapids Division, Saginaw, Mich., vice J. L. Hayes, transferred.

A. C. RHODES, heretofore Chief of Bureau, Departmental Accounts, Auditor Station Accounts, Detroit, Mich.

O. L. KINNEY, heretofore District Passenger Agent, Toledo, Ohio, Western Passenger Agent, Chicago, Ill.

J. K. COOPER, heretofore City Passenger and Ticket Agent, Grand Rapids, Mich., District Passenger Agent, Toledo, Ohio, vice O. L. Kinney, promoted.

W. S. BAKE, Land Agent, Detroit, Mich.

W. W. BRACY, stationer, Detroit, Mich.

C. J. RIST has been apopinted Division Engineer, Toledo-Ludington Division, Saginaw, Mich., vice J. E. Johnson, resigned to enter Michigan Central Rd. service.

Quebec & Saguenay Ry.—See Canadian Government Railways.

Quebec, Montreal & Southern Ry., Napierville Jct., Ry.—See Delaware & Hudson Co.

St. John Valley Ry.—W. P. JONES has been appointed President and General Solicitor, Fredericton, N.B.

E. S. CARTER has been appointed Secretary, Fredericton, N.B.

C. O. FOSS, formerly District Engineer, National Transcontinental Ry., St. John, N.B., has been appointed Chief Engineer, St.J.V.R., Fredericton, N.B.

Spokane International Ry.—E. PENNINGTON, President, Minneapolis, St. Paul & Sault Ste. Marie Ry., Minneapolis, Minn., has also been elected President, Spokane International Ry., vice D. C. Corbin, who retired on the acquirement of the railway by the C.P.R., mention of which was made in our last issue.

E. S. McPHERSON, heretofore Assistant Secretary, Minneapolis, St. Paul & Sault Ste. Marie Ry., Minneapolis, Minn., has been appointed Assistant to the President, Spokane International Ry. Office, Spokane, Wash.

G. W. WEBSTER, Secretary, Minneapolis, St. Paul & Sault Ste. Marie Ry., has also been appointed Secretary and Treasurer, S.I.R. Office, Minneapolis, Minn.

Following are other officers of the organization:

A. R. HERRICK, Assistant Secretary and cashier, Spokane, Wash.

J. E. HANIFEN, Superintendent, vice E. J. Roberts. Office, Spokane, Wash.

G. H. MARTIN, General Freight and Passenger, Agent, Spokane, Wash.

E. F. CARDLE, Assistant General Freight and Passenger Agent, Spokane, Wash.

C. H. PRESCOTT, Master Mechanic, Spokane, Wash.

J. C. WILLIAMS, Auditor, Spokane, Wash.

Toronto, Hamilton & Buffalo Ry.—F. F. BACKUS, heretofore Assistant to the President, has been appointed General Manager, and his former position has been abolished. Office, Hamilton, Ont.

Wabash Ry.—The stores and purchasing departments have been separated and ERNEST BAXTER, heretofore Service Inspector, St. Louis, Mo., has been appointed General Storekeeper, reporting to the Vice President, vice A. J. Sewing, assigned to other duties. Office, St. Louis, Mo.

F. M. NOWELL has been appointed Superintendent, Detroit Terminal Division, which includes the line from Detroit to and including Oakwood yard. He is in charge of all the operating departments, and reports to the Superintendent, Locomotive and Car Department; Chief Engineer, Maintenance of Way, and Superintendent of Transportation, in matters relating to their respective departments. Office, Fort St. Union Station, Detroit, Mich.

Intercolonial Ry. Coal Contracts.—The Minister of Railways stated in the House of Commons recently that the Department had entered into contracts for the supply of coal as follows: Dominion Coal Co., 260,000 tons; Intercolonial Coal Co., 90,000 tons; Bras d'Or Coal Co., 10,000 tons; Milford Coal Co., 5,000 tons; Maritime Coal Co., 10,000 tons; Minudie Coal Co., 5,000 tons; Jones & McKinnon, 8,000 tons; M. F. Keith, 7,000 tons.

Traffic Orders by the Board of Railway Commissioners.

Alleged Underbilling of Freight.

26015. April 13. Granting the application of C.P.R. under section 400 of the Railway Act, for leave to prosecute G. C. Curtis, of Lacombe, Alta., for alleged fraudulent underbilling of certain shipments of freight.

Use of G.T.R. Yard in Montreal.

26055. April 20. Re complaint of G. H. Bavis of Montreal, that the G.T.R. refuses the use of its McGill St. yard, Montreal, for loading and unloading cartage freight. Upon hearing the complaint at Montreal, April 18, the Montreal Board of Trade and the railway company being represented, the complainant appearing in person; the railway companies having been required to justify the laying down or setting apart of certain tracks for the sole use of particular lines of traffic to the exclusion of others. It is ordered that the complaint be dismissed.

Demurrage on Grain at Niagara Frontier

26070. May 2. Re complaint of Toronto Board of Trade against assessment of demurrage at the Niagara frontier on cars containing Canadian grain for export through United States ports, while awaiting Canadian Government inspection; the inspection being a requirement of United States carriers. Upon hearing the complaint at Toronto, April 13, the Toronto Board of Trade, the Canadian Pacific, Grand Trunk, and Toronto Hamilton & Buffalo Railways, and the Michigan Central Rd being represented. It is ordered, that the complaint be dismissed.

Demurrage on Coal Cars.

26059. May 1. Re application of Retail Merchants Association of Canada, Toronto (Ontario Provincial Coal Section) for an order directing that, in cases where demurrage is charged on cars placed on public or private sidings and such charges are deemed by the shipper or consignee to be unreasonable, such shipper shall pay the charges under protest and may, within 10 days thereafter, appeal to the board, which shall determine such appeal, and, if the charges are found unreasonable, issue an order directing the carrier to refund the amount to the appellant, such order to be final. Upon hearing the application at Toronto, April 13, the applicants, the Grand Trunk, Canadian Pacific, and Canadian Northern Railways and the Michigan Central Rd. being represented, the application being withdrawn. It is ordered that the same be dismissed.

Potato Rates from Maritime Provinces.

26091. May 8. Re complaint of Jones & Jones, Woodstock, N.B., on behalf of shippers of potatos in the Maritime Provinces, against the increased rates proposed to be charged by the Canadian Pacific and Temiscouata Railways under Tariffs C.R.C. no. E-3176 and C.R.C. 256 respectively, suspended until further order by order no. 25322, Aug. 30, 1916: Upon hearing the complaint at St. John N.B., Nov. 9th, 1916, it is ordered that order 25322, suspending C.P.R. Tariff, C.R.C. no. E-3176, and Temiscouata Ry. tariff, C.R.C. no. 256, be rescinded; provided that the rates in the said tariffs, where higher, be reduced to the St. John eighth-class basis, from stations shown therein on the Canadian Pacific and the Temiscouata Railways.

Rates on Binder Twine from Welland.

26102. April 20. Re complaint of Plymouth Cordage Co. against rates on binder twine, in carloads, from Welland, Ont., to points east of Toronto, to and on hearing the complaint at Ottawa, Feb. including Kingston and Smiths Falls. Up-20, the complainant, the Canadian Manufacturers' Association, the Canadian Pacific and the Grand Trunk Railways and the Michigan Central Rd. being represented, it is ordered that the complaint be dismissed.

Freight Rates on Canned Goods.

26116. May 16. Re complaint of Regina Board of Trade and H. G. Smith, Ltd., of Regina, against the increased freight rates charged on canned goods and dried fruits, effective Mar. 1, 1917, from Pacific coast points to Regina. Upon hearing the complaints at Regina, Mar. 15, the Boards of Trade of Regina, Saskatoon, Moose Jaw, and Yorkton, the Canadian Manufacturers' Association, Codville & Co., Campbell Brothers & Wilson, the Provincial Retail Merchants' Association, and the Canadian Pacific, Canadian Northern, and Grand Trunk Pacific Railways being represented at the hearing, it is ordered that the complaints be dismissed.

Movement of Grain from Goose Lake District.

26117. May 16. Re movement of grain in the Goose Lake District, served by the Canadian Northern Railway and the transportation thereof. Upon its being represented to the board that it is necessary that grain should be moved just as soon as possible, in order to prevent loss, it is ordered that the Grand Trunk Pacific and the Canadian Pacific Railways be directed forthwith, as long as they continue to do so and as long as the emergency exists, to supply cars at the rate of 75 and 50 a day respectively, to the Canadian Northern at the transfer track at Saskatoon; the said cars to be taken into the Goose Lake District by the Canadian Northern, loaded, and returned to the Grand Trunk Pacific and the Canadian Pacific Railways at Saskatoon for furtherance to the elevators at the head of the lakes. That the through rates for the joint carriage of the said grain, as herein proscribed, shall be the rates published and filed by the Canadian Northern for the carriage of grain over its own rails, or jointly with its eastern connections, as so published, east of Saskatoon, from the said points of shipment to the same destinations; the allocation of the said joint rates between the carriers hereby made parties thereto to be arranged between themselves within one week from the date of this order, and, failing such arrangement, to be settled by the board, subject to such submissions in relation thereto as either railway company may desire to make, provided that the uninterrupted movement of the said grain be not impaired pending such settlement.

Algoma Eastern Ry. Interswitching.

26121. Re order, April 16, 1917, granting leave to Algoma Eastern Ry. to charge interswitching rate of 1c per 100 lb. shown in its tariff, C.R.C. no. 169, from Feb. 15, 1917. Upon reading the submisions filed, and the report of the Board's Chief Traffic Officer, it is ordered that the said order be amended by striking out the words, "from the effective date of the said tariff, viz., Feb. 15, 1917," in the two last lines of the order. And it is further ordered that Supplement 2 to Algoma Eastern Ry. Co.'s Tariff, C.R.C. 169, be amended by striking out the words, "effective Feb. 15, 1917."

Moncton & Buctouche Ry. Tariff.

26156. The application of Moncton & Buctouche Ry. Co., under sec. 327 of the Railway Act, for approval of its Standard Freight Mileage Tariff, C.R.C. no. 25. Upon the report and recommendation of the Board's Chief Traffic Officer, it is ordered that the tariff be approved. And it is further ordered that order 25737, Dec. 20, 1916, approving the company's Standard Freight Mileage Tariff, C.R.C. no. 23, be rescinded.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

Niagara Frontier Summer Rate Committee — James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Granville Street, Vancouver, B.C.

Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.

Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

New Heavy Freight Car.—The Pennsylvania Rd. is building a hopper car of 85 tons capacity to a design for large load capacity and large bulk capacity in combination. The light weight of the car will be 60,000 lb. Its load capacity will be 170,000 lb., and it volume capacity level with top will be 2,900 cu. ft. The loaded weight will be 115 tons; and as the trucks will be four-wheeled, each axle will carry a load of 57,500 lb. under full load. The car will be 48 ft. 4 in. long over end sills and 38 ft. 4 in. between truck centres. As the trucks will have 5 ft. wheelbase, a pair of such cars coupled together will have four consecutive axles at 5 ft. spacing, each carrying over 57,000 lb. load. This approximates the heaviest engine driving wheel loading used in bridge design. The average weight of the car per lineal foot, however, will be a little less than 4,800 lb.

Car Shortage in the U.S.—The Interstate Comemrce Comission has been given power to take complete control of the movement of railway cars engaged in interstate commerce, so that there shall be adequate accommodation for the nation's war requirements, and to relieve the prevalent car shortage.

Electric Railway Department

Electric Railway Statistics for Year Ended June 30, 1916.

The following abbreviations are used in the names of railways:—E, electric; E.R., electric railway; E.S.R., electric street railway; S.R., street railway. The minus mark (—) in the column for net income or deficit, shows that there was a deficit in the operation of the line to the extent of the figures given.

Name of Railway	1st Main track mileage	Gross earnings from operation	Miscellaneous earnings	Operating expenses	Taxes funded debt. etc.	Net income or deficit	Total car mileage	Fare passengers carried
Berlin and Waterloo S. R.	3.28	$ 51,656	.....	$ 36,011	$7,764	$ 7,881	207,5281	1,010,114
Berlin and Northern Ry.	3.15	8,271	.....	6,960	1,601	—290	35,400	192,227
Berlin, Waterloo, Wellesley and L.Huron Ry.	17.81	218,032	.....	122,645	21,827	73,559	301,177	1,373,823
Brandon Municipal Ry.	10.31	29,258	.....	28,660	20,100	—19,501	235,281	627,739
Brantford and Hamilton Ry.	23.00	141,647	.....	109,232	88,804	—56,390	362,164	759,063
Brantford Municipal Ry.	29.96	99,717	.....	64,938	.....	34,779	853,643	1,514,418
British Columbia E. R.	242.55	2,468,143	$1,594,528	2,448,896	944,145	669,629	12,557,439	43,021,598
Calgary Municipal Ry.	55.00	548,494	15,877	375,777	109,284	79,309	2,527,410	12,986,234
Canadian Resources Development	1.75	331	.....	1,478	.....	—1,146	6,636	6,633
Cape Breton E. R.	30.52	220,412	122,713	135,931	116,594	90,599	685,446	4,171,838
Chatham, Wallaceburg & Lake Erie Ry.	36.94	148,164	.....	81,212	41,438	25,513	494,655	416,049
Cornwall E. R.	4.00	33,555	77	22,359	5,618	5,655	223,306	422,221
Edmonton Interurban Ry. (1)	8.19	.....	.....	.....	.....	.....	.....	.....
Edmonton Radial Ry.	52.37	534,163	.....	367,894	277,012	—110,743	2,138,498	10,948,518
Fort William E. R.	19.88	113,421	.....	87,643	81,887	—56,109	618,364	2,581,029
Guelph Radial Ry.	8.50	45,143	.....	33,627	1,639	9,876	278,975	1,090,017
Halifax Electric Tramway Co.	12.29	350,077	214,195	212,270	58,352	293,649	1,362,693	8,061,025
Hamilton and Dundas E. R.	7.00	75,599	.....	56,059	6,131	13,408	166,663	974,519
Hamilton, Grimsby and Beamsville E. R.	22.00	136,420	.....	124,279	14,639	—2,498	405,235	1,019,152
Hamilton S. R.	30.06	659,709	.....	414,301	101,530	143,877	2,618,393	15,630,059
Hamilton Radial Ry.	25.00	171,407	.....	155,041	57,161	—40,796	524,640	1,234,890
Hull Electric Co.	15.67	157,800	30,168	124,537	62,602	829	798,716	2,513,257
International Transit Co.	4.30	97,386	41	64,204	14,747	18,476	287,342	1,536,747
Kingston, Portsmouth & Cataraqui E. R.	8.00	43,229	1,708	30,763	3,970	8,496	199,680	1,032,656
Lethbridge Municipal Ry.	11.00	46,853	.....	41,039	24,175	—18,361	284,234	963,719
Levis County Ry.	11.75	94,976	.....	84,102	23,370	—12,495	416,341	2,034,518
London S. R.	35.19	422,640	.....	282,250	44,643	95,747	1,960,217	11,342,886
London & L. Erie Ry. & Transportation Co.	28.00	82,410	46	85,594	47,325	—50,463	.....	403,717
London and Port Stanley Ry.	23.60	281,058	.....	180,619	76,524	23,913	549,610	548,326
Moncton Tramways Elec. & Gas Co.	4.47	16,808	63,999	18,531	.....	62,267	117,301	426,961
Montreal Tramways Co. (2)	124.26	6,609,765	.....	3,707,053	2,118,405	784,306	.....	156,408,303
Montreal and Southern Counties Ry.	52.20	217,378	251	215,434	92,072	—89,877	604,018	1,982,983
Moose Jaw E. R.	9.00	89,599	.....	73,988	.....	15,610	409,240	1,962,852
Nelson S. R.	2.13	11,635	.....	13,127	.....	—1,492	30,236	273,096
Niagara Falls Park and River Ry.	11.91	121,242	6,430	240,981	34,298	—142,607	272,034	1,212,043
Niagara, St. Catharines & Toronto Ry.	63.07	691,593	.....	443,635	18,186	229,771	1,445,224	5,524,212
Niagara, Welland and Lake Erie Ry.	1.87	25,738	.....	10,568	4,412	10,757	86,892	552,765
Nipissing Central Ry.	15.37	108,215	516	72,635	11,704	24,391	268,525	1,386,748
Oshawa Ry.	9.00	105,391	483	61,826	3,647	40,400	81,910	283,500
Ottawa E. R.	28.11	1,081,303	.....	646,577	88,645	346,079	4,756,501	25,392,750
Peterborough Radial Ry.	6.39	56,701	.....	37,170	11,009	8,521	437,896	1,240,680
Port Arthur Civic Ry.	12.43	96,375	1,301	81,039	69,093	—52,456	561,921	2,155,425
Quebec Ry., Light and Power Co.								
Citadel Division	19.91	523,524	.....	322,695	.....	200,829	2,098,926	12,278,607
Montmorency Division	28.60	210,398	.....	144,971	.....	65,426	442,378	1,775,523
Regina Municipal Ry.	31.35	192,865	.....	186,947	98,937	—93,019	909,098	4,236,310
Sandwich, Windsor and Amherstburg Ry.	40.78	331,108	35,657	191,138	38,419	137,208	1,103,557	6,044,912
Sarnia S. R.	8.25	62,936	.....	44,711	4,902	14,429	209,196	1,066,477
Schomberg and Aurora Ry.	14.40	13,685	.....	15,637	35,011	—36,962	21,090	24,092
Sherbrooke Ry. and Power Co.	9.00	49,621	54,814	38,085	62,630	3,179	419,294	1,128,432
St. Stephen S. R.	7.00	40,530	.....	29,621	5,777	5,131	183,960	766,583
St. Thomas S. R.	7.00	22,263	.....	27,237	.....	—4,974	295,785	489,051
Suburban Rapid Transit	21.02	167,872	30,980	67,642	31,749	—20,362	432,468	767,973
Saskatoon Municipal Ry.	12.63	48,084	.....	116,624	37,725	13,522	736,077	3,257,611
Three Rivers Traction Co.	4.00	21,493	.....	19,270	5,566	—3,343	130,308	411,856
Toronto Civic Ry.	9.14	212,858	.....	193,388	89,459	—69,989	1,262,685	12,604,038
Toronto Ry.	116.44	5,839,393	90,000	3,227,963	1,336,159	1,365,270	20,056,819	145,812,384
Toronto Suburban Ry.	18.79	164,640	3,807	80,667	55,398	32,381	468,651	2,890,880
Toronto and York Radial Ry.	72.43	547,850	.....	382,606	155,609	9,633	2,221,344	5,454,649
Winnipeg E. R.	110.14	2,121,653	650,226	1,401,578	587,227	783,074	10,424,726	548,220
Windsor, Essex & Lake Shore Rapid Ry.	36.17	165,194	.....	103,828	58,912	2,453	508,669	540,220
Winnipeg, Selkirk & Lake Winnipeg Ry.	39.40	129,236	10,431	82,717	37,992	18,960	431,052	663,617
Yarmouth E. R.	3.00	39,340	312	21,665	12,430	5,556	89,145	249,111
Total	1,730.73	$27,416,284	$2,928,573	$18,099,905	$7,358,283	$5,774,916	82,516,612	580,094,167

(2) Montreal Tramways Co, additional mileage	7.65	Less deficits	—888,489
(3) Pictou County E. Co.	9.10	Total net income	$4,686,067
(4) St. John Ry.	18.15		
	1,765.63		

Notes to Electric Railway Statistics.

The figures in the foregoing table are taken from the annual returns to the Dominion Railways Department, which, however, are incomplete, there being again no returns from the Montreal Tramways Co., the Pictou County Electric Co. and the St. John Ry., as has been the case for some years past. The figures prefixed to the following notes refer to similar figures in the first column of the table:

(1) The Edmonton Interurban Ry. was not in operation during the year.

(2) The figures given for the Montreal Tramways Co.'s first main track mileage, 124.26, are those used in the 1915 statistical tables, in which they were stated to be the figures used in 1911 report. The actual first main track mileage at Dec. 31, 1916, was 131.91 miles. The earnings, expenses and passengers carried are apparently taken from the company's report for the year ended June 30, 1916, as given in Canadian Railway and Marine World for Sept., 1916, pg. 375.

(3 and 4) The Railways Department does not receive returns from the Pictou County Electric Co. and the St. John Ry. The latest figures we have of these companies' first main track mileage, 9.10 and 18.15 miles respectively, have been added by us at the bottom of the table to show the total mileage in Canada, viz.: 1,765.63, against 1,730.73 shown by the Railways Department.

The Brantford Municipal Ry. appears in the table in place of the old Grand Valley Ry., which included the Brantford Electric Street Ry. The London & Port Stanley Ry. and the Schomberg & Aurora Ry., formerly steam railways, having been electrified, are transferred to electric railway mileage. The other new lines reporting are the Three Rivers Traction Co. and the Toronto Civic Ry. The total first main track mileage shows an increase of 140.44 miles over June 30, 1915.

Five companies reported that they were operating cars over 210.84 miles of lines leased from other companies.

Twenty-seven of the companies carry freight over their lines, the number of tons carried for the year ended June 30, 1916, being 1,936,674; and 23 of the companies reported a freight, mail and express car mileage of 1,990,375 miles in addition to passenger car mileage.

Winnipeg Electric Railway Advertising.

The Winnipeg Electric Railway is a thorough believer in advertising for business, and for some time past has been carrying on a general campaign in Winnipeg daily papers and by the distribution of leaflets. The company supplies gas, electric light and power, and street car service, and while there is a specialization along each of these lines, the broad general line of argument in all the company's advertizing is service. "It is your right as a citizen to expect good service," says one of the leaflets. "It is our duty to serve you, . . . may we have your co-operation." Another says," We hold our success not in the light of dollars and cents, but rather in the expansion and development of our efforts to better serve the public," says another, while a third says: "We ask you, not as our fellow townsmen, not as a big corporation, but from the point of view of your own citizenship, to consider the transportation question of Winnipeg as having a vital interest to you personally, for man's greatest interest is man, and that man well known to you."

The various leaflets and newspaper advertisements bring out and illustrate various matters in connection with the company's service; show how it aids in maintaining the streets, contributes to the general revenue of the city, and how it is controlled and restricted by law in the public interests. In others the question of the jitney traffic is discussed. The jitney is described as a freelance vehicle, practically unrestricted by authority, operating only in fine weather and then only on short and profitable runs and only paying a small license fee. The company claims "that the jitney is a stumbling block in the way of Winnipeg's future," and in another advertisement recognizes "that the jitney serves to advantage a small number of the public. But can the minority be considered in a big issue which so vitally effects Winnipeg and its future?" Can you as a broad minded citizen, allow one form of transportation all the advantages when, by so doing, you are hourly strangling that system which has helped build Winnipeg to its present greatness and the support of which will mean most for your own and Winnipeg's future!"

The advertisements in the daily papers are mostly in the form of short talks, direct and forceful over the signature of F. Morton Morse, the Secretary-Treasurer and a director. A number of them are illustrated, with views of Winnipeg, with statistical information graphically displayed. One particularly good illustration shows the development of transportation from the oxcart to the present type of interurban car.

Mainly About Electric Railway People.

W. G. Ross, President, Montreal Harbor Commission, and a director, Montreal Tramways Co., has been elected a director of the Canadian General Electric Co.

A. E. Wideman, who resigned recently as Chairman of the Port Arthur Public Utilities Commission, operating the Port Arthur Civic Ry., Port Arthur, Ont., remains a member of the board.

E. P. Coleman, General Manager, Dominion Power & Transmission Co., Hamilton, Ont., and President, Canadian Electric Railway Association, spent a short holiday in Algonquin Park in May, with his two young sons.

Thos. Ahearn, President, and James D. Fraser, Secretary-Treasurer and Director, Ottawa Electric Railway, who left Ottawa on Feb. 20 for California, returned home early in May. They went via New Orleans, spending most of their time at Coronado, and visiting Riverside, Los Angeles and San Francisco, returning via Portland, Oregon, and Chicago.

B. Greenway, General Foreman, and for the last two and a half years, acting Assistant Superintendent, Regina Municipal Ry., Regina, Sask., was presented with a gold watch, fob and gold mounted pipe by the employes recently, on his leaving Regina for Grand Forks, N.D., where he has been appointed Superintendent, Grand Forks St. Ry.

C. U. Peeling, who has been Manager of the electric light and gas properties at Oshawa, Ont., which are operated by the Hydro Electric Power Commission of Ontario, has been appointed Manager of the Cornwall St. Ry., Light & Power Co. and the Stormon Electric Light & Power Co. at Cornwall, Ont., succeeding Wm. Hodge, who has resigned after occupying these positions for 12 years. Mr. Hodge will remain in Cornwall, and will be prepared to give his assistance and advice regarding the properties.

Jitney Traffic Notes.

About 400 jitney licenses have been taken out in Winnipeg this year up to date. In 1916 there were 558 issued.

The Winnipeg City Council was asked, May 10, by the Winnipeg Automobile Club to pass a bylaw to require jitneymen to put up a bond, as is done in other cities.

The Vancouver, B.C., Jitney License Inspector is reported to have stated recently that there were 10 more jitneys in operation in the city than there were at any time during 1916.

The Union Jack Motor Co. put in operation 10 additional cars on its motor service between Vancouver and New Westminster, B.C., May 1. It is operating on a 15 minute schedule, with a 40c fare for the round trip.

Owing to reduction in traffic the Winnipeg Electric Ry. put in force a new car schedule, May 1, which requires 14 less cars to run than were used during the winter. It is reported that on some of the heaviest routes a car is now only making about $25 a day in place of from $45 to $50 a day three years ago. The reduced traffic is stated to be almost entirely due to jitney competition.

In connection with the communication addressed to Winnipeg City Council by the Winnipeg Electric Ry., as to jitney competition, which was given in Canadian Railway and Marine World for May, the City Solicitor has advised the council to refuse to admit that the company has any ground for holding the city responsible for the losses which the company alleges it has sustained through the competition of jitneys, which are licensed by the city to do business.

Fares on Port Arthur and Fort William Municipal Railways.

Canadian Railway and Marine World for April gave particulars of a proposed new schedule of fares for the Port Arthur Civic Ry. and the Fort William Municipal Ry. The two cities have since forwarded a joint application to the Ontario Railway & Municipal Board, for a revision of their fares in accordance with the following schedule.

One fare in each city. This means that after crossing the boundary line between the two cities on a car another fare will be collected.

Regular fare 5c, or 6 tickets for 25c, good from 5.30 a.m. until 12 midnight.

Workmen's fare 5c, or 8 tickets for 25c; good from 5.30 a.m. to 8 a.m.. and from 5.30 p.m. to 7 p.m. from Monday to Saturday (inclusive). Sunday tickets, 8 for 25c, good from 5.30 a.m. to 12 midnight.

Children's tickets, up to 14 years of age, 10 for 25c, good all hours, every day of the week, Sunday included. All bona fide students above 14 years privileged to use children's tickets from 8 a.m. to 5 p.m. on school days. Children under 14 years of age may use school children's tickets on Sunday, good for through ride.

The Board decided to hear the application at Port Arthur on June 19.

A Few Disconnected Ideas on Street Railway Operation.

By F. D. Burpee, Superintendent, Ottawa Electric Railway.

I will endeavor in this paper to describe a few ideas we are using in Ottawa. The paper will be short and if the matter it contains is not new to the reader, he will not have lost much time.

Car Service Regulation.—Some years ago, when the service on the different lines of our system was supervised by inspectors, who were for the greater part of the time around the centre of the system, it was found that the motormen made an effort to be on time passing through the centre, but loafed at the termini. They tried to make the lay at the terminus as long as possible, by arriving ahead of time and leaving behind time, making gaps in the service and causing many complaints. To correct this condition, we have established a starting office for each line, situated at or near a terminus. The starters were chosen from the list of conductors and motormen, old hands thoroughly familiar with car service work, and men who showed they were intelligent and tactful. These offices, beside controlling the service on each line, sell tickets, issue transfers, and keep on hand a stock of sand, salt and supplies for minor repairs, which often makes it possible to keep cars in service that would otherwise have to go to the repair shop. The cars leave the barns in the morning with instructions to get to certain points for their first trip. After that the service is entirely in charge of the car starter, who gives the motormen so many minutes for the round trip. He extends or reduces this time as the traffic fluctuates, and works the rush hour extras into the service when they come out. Each starter makes a daily report showing the exact time each car passes his office and gives an explanation of any gaps that may appear. When rush hour extras go into the barns he arranges his regulars so that the gaps are quickly absorbed.

At the centre of the system we maintain a checking office in charge of the Traffic Inspector, whose clerk records on a large sheet the time each car passes east and west. As nearly all lines pass this office the sheet shows at a glance the whole service. It is the duty of the Traffic Inspector to consult the car service sheet, investigate gaps, and keep his eye on the service generally. He keeps in close touch with each starter by telephone and is their immediate chief. He makes a daily report to the Superintendent, exnlaining each gap shown by the car service sheet and any other items or recommendations concerning his department. We have established four starting offices, two of them being placed at a point where two lines intersect and have control over both lines. They cost us about $2,500 each per year, but we consider the money is saved many times over in the splendid service obtained. They have proved a splendid means of maintaining the time interval between cars and when blockades occur the service can be reorganized in a very short time.

Each car carries a card giving the time it should pass various time points. The card is held by a clip in the front vestibule where the motorman can easily consult it. Hooks for motormen's watches are just beneath the time card.

I consider the success of our starting offices largely due to the men who were chosen for starters. They should be men who will not antagonize the conductors and motormen, but firm enough to have their orders promptly carried out. Briefly, they must be intelligent and tactful, with a thorough knowledge of the car service work. It provides an excellent position for the conductor or motorman who is above the average, and worthy of promotion.

Operation of Sweepers.—Each autumn we book our sweeper crews for the winter, taking them from the old hands. We choose men who can be relied upon and who agree to show up whenever called. They are men who are booked on regular day and relief runs, working the same cars. When sweepers are needed these crews are relieved by spare men and go to the barns for their sweeper, or in an emergency run their cars in. Each crew has its own sweeper and route and are held responsible for both. They stay with their sweeper until it is sent in or relieved by their regular relief crew. The relief crews stay out until after midnight if necessary, and come when called between that hour and 6 a.m.

Maintenance of Equipment.—While I think every operating man is convinced that the policy of giving each motorman his own car is a god one, he does not know until he tries it what an effect it has on maintenance cost and regularity of service. Owing to the fact that we have not open terminal barns, it has been considered impossible to inaugurate it here. It was attempted on one occasion, but the shunting necessary to place the cars caused so many complaints from residents in the neighborhood of the barns that it was discontinued. We found recently, however, that by arranging the runs so that the first cars out in the morning are the last in at night, each man could be given his own car and the shunting practically eliminated. We have put this arrangement in force on all our lines. The men are taking a keen interest in their cars, even to the extent of asking for brass polish and cloths to keep everything polished up and looking well. If a day man finds that his car has been abused the night before, he comes down with both feet on the night man, and vice versa. If the man at fault is a spare, he gets a lecture on car operation that he remembers. In the old days a man seldom reported defects, because his chance of getting the same car the next day was remote. Now he reports everything that is not in first class shape on his car and keeps at it until he gets it fixed. The conductors seem to be as keenly interested as the motormen.

Elimination of Skid Flat Wheels.—We have always had the skid flat wheel trouble with us, due to the extreme variations in temperature and the frequency at such times of what the motormen call a "bad rail." Some equipment men will tell you that if a wheel is flattened, scrap it. I have heard this statement from the superintendent of a large system, but during a visit to his city counted over a dozen cars with flat wheels in half an hour. Of course we all know that if the flat spot is small it will, in the course of time, pound out. During the pounding process, however, the passengers have a few things to say about the road. We have installed a wheel grinder and have done well enough with it to justify its purchase, but have had more success by getting at the root of the trouble and preventing the flattening by the motormen. We have established a rule that each motorman who flattens a wheel must make an accident report of it and give an explanation of the damage he has done. There are times when a man is to be commended for flattening wheels. It may be that he has averted a serious accident. In the majority of cases, though, the damage might be avoided, and is often due to carelessness. The starting office on each line is provided with a pad on which to record verbal reports of motormen who receive cars with flat whels. If a motorman takes a car in that condition from a barn or from the crew he is relieving, he reports the car number at his starting office at the first opportunity. The starter records the man, and car, and time report is made. The last man to handle this car, who has not so reported it, is held responsible for the damage, and, if he has not already done so, is called upon to make out a report. Due allowance is made for weather conditions. We have days when it is impossible to keep cars from skidding. Under such conditions flat spots are liable to appear with the best of motormen. Whatever the reason, we have succeeded in reducing our flat wheel trouble remarkably. It is partly due, I think, to the fact that each man has his own car, and also to the moral effect of making each man at fault make an accident report and place himself on record as being responsible for the damage.

Car Changers.—When a car becomes disabled it used to be our practice to send it in and give the crew another car. This made a gap in the service. For several years back we have kept a crew at the repair shop who are known as car changers. They are ex motormen of long service and have an intimate knowledge of the various runs. Fortunately for us these men have taken a keen interest in their work and keep themselves informed of any changes in the service, so that they have a pretty good idea, when a car is reported, just where they can meet it. When some trouble develops on a car, which is beyond the ability of the motorman to repair, he reports it at his starting office. The starter telephones the repair shop. When the car comes back to the centre of the city the crew find a car waiting at some convenient point, transfers the passengers and go ahead. The car changers take the disabled car back to the repair shop. There is no delay and no gap.

Bulletins.—It was our practice until a short time ago to post bulletins in a book and have each man sign opposite his number, but we found that there were always a large number of men who neglected to sign and also a large number who signed without reading the bulletin. We have substituted bulletin boards and loose leaf books at each barn, and in the conductors' and motormen's lounging room. We post on the bulletin board a copy of every bulletin issued and in the books copies of those we wish to preserve, so that a man who has been off duty can read all bulletins that have been issued during his absence. We have also started the publication of a small monthly sheet called "The Ottawa Electric Railway Bulletin," which is given to the men with their pay envelopes on the 20th of each month. While this is primarily intended to contain copies of bulletins issued the month previous, it also contains other matter on efficiency, courtesy, safety, etc., set forth in a more or less interesting way. We

hope in the course of time to extend the scope of this publication to taking in all the departments and make it appeal to the employes of every department. In its present form of four pages the bulletin costs us about $15 a month for 1,000 copies.

Seniority.—Operating men should realize, and probably do, the importance that a conductor or motorman's place on the seniority list has for him. He goes through the hard times of being a spare man and the long spell of night work, and for some years looks forward all the time to something better. These better things depend entirely on his advancement in order of seniority. It does not seem fair that, except in the case of sickness, men should get leave of absence for several months and when they return take exactly the same place on the seniority list as when they left. We have cases where men have been away one year out of five, but have been credited with five full years, whereas they have only worked four. They have held their places on the seniority list ahead of men who have worked nearly five years. This had led to some discontent among the men. Seniority should mean length of actual service rendered. We have established a rule that a man who obtains leave of absence for any period more than one month, will be reduced on the seniority list the length of time he is away from duty.

EDITOR'S NOTE — The foregoing paper was written before Mr. Burpee obtained leave of absence for military service. He is now a major in the 207th Battalion, which was recruited in Ottawa and which is now overseas.

Regina Municipal Railway Earnings.

Following are the earnings, expenses, etc., for April, compared with those for Apr. 1916, and the aggregate totals for 4 months ended Apr. 30, 1917:

	Apr. '17	Apr. '16	4 mths. to Apr.30,'17
Total earnings . .	$18,986.56	$18,121.67	$81,296.26
Operating expenses	15,955.08	15,241.47	69,603.27
Capital charges ..	7,953.34	8,963.80	32,022.22
Operating surplus	3,031.48	2,880.20	11,692.99
Deficit	4,921.86	6,083.60	20,329.23
Exp's per car mile without power .	15.83c	10.01c	16.78c
Exp's per car mile with power	20.89c	20.11c	22.45c
Cost per k.w.h. ..	1.41	1.99	1.41
Cost per car mile .	5.06	5.34	5.66
Platform wages per car hour	78.18	72.94	77.58
Total passengers .	425,117	410,697	1,820,098
Expenses per cent. of earnings, less capital		84.09	
Expenses per cent. of earnings, with capital		125.97	

One-Man Cars in Edmonton, Alta.—The Edmonton Radial Ry. is operating one-man cars upon two routes, and on May 14 decided to adopt them on a third route. Superintendent Moir reported in favor of using them on all routes on the system except the one from North Edmonton to 124th St. The present wages bill for motormen and conductors is $461.44 a day, but under the one-man car system if carried out as recommended it would be reduced to $358.70 a day. There will be no lessening of the service, under the system, but it is hoped to give a quicker service than at present.

The American Electric Railway Association has decided that the convention in its usual form be abandoned for the present year, and that the member companies be communicated with at a later date, advising such a meeting as it may seem proper to substitute.

Answers to Questions on Electric Railway Topics.

Following are answers by Canadian electric railway officials to questions sent in to the American Electric Railway Association's question box:

Changing Wheels.—Do you change car wheels as to defects according to individual inspector, or do you do it by fixed rules?

W. R. McRae, Master Mechanic, Toronto Ry., Toronto.—Equipment inspectors spot wheels and leave for special wheel inspectors, who decide cause and action.

Vestibule Doors.—In operating cars with bulkhead doors and vestibules, do you require the motorman to keep the bulkhead doors closed?

F. L. Hubbard, Assistant to General Manager, Toronto Ry., Toronto.—Yes, in winter; during the summer months doors are kept open.

Automatic Crossing Bells.—How long should automatic crossing bells ring before the train arrives at the crossing?

C. L. Wilson, Assistant Manager, Toronto & York Radial Ry., Toronto.—The Ontario Railway Act calls for warning to be given by whistle or bell 80 yards before arriving at a crossing. This, we think, should fix the length of time an automatic bell should ring.

Fencing Right of Way.—Is it your practice to keep all private right of way and miscellaneous property carefully fenced in?

W. G. Murrin, Asistant General Manager, British Columbia Electric Ry., Vancouver.—Yes.

Installation of Cattle Guards.—When operating in territory where the law forbids cattle and other domestic animals to run at large, is it necessary to install cattle guards?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver.—Yes, at all public road crossings we make a practice of installing cattle guards.

Fire Protection on Bridges.—What is your method of protecting wooden bridges and trestles against fire?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver.—Water barrels and water buckets are placed on bridges at about 200 ft. intervals.

Conversion of Cars to One Man Operation.—Is it not possible to make over old cars to one man operation, so that they will be a satisfactory substitute for new equipment for this purpose?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver.—We have not had any experience in rebuilding old cars for one man operation, although last summer we rebuilt one of our old cars to the open air type, centre entrance. From our experience with it so far it has proved satisfactory.

Waiting Rooms in Cities.—Are waiting rooms justified for city traffic, where the headway is less than 15 mins.?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver.—No, we do not think that waiting rooms are justified on lines where the headway is less than 15 mins.; where we give a 30 min. service on suburban lines, we furnish waiting rooms.

Lighting of Waiting Rooms.—On interurbans running through sparsely settled territory, is the lighting of waiting rooms or shelters necessary?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver.—Yes, we think it advisable that shelters on interurban lines should be lighted, and particularly so where the shelter is built up from the roadway.

Automobiles for Officials.—Do you provide open or closed automobiles for the use of your executive officials?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver.—We provide open automobiles for executive officers.

Bridges With Draw Spans.—What is the most practical and economical way to safeguard operation over bridges with draw spans?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver.—We consider the best method is to install section insulators 1,000 ft. on each side of the draw span, which causes the trolley to become dead between this point and the draw as soon as the draw commences to open; in addition to this, a compulsory stop should be made requiring all cars to come to a full stop at all times before proceeding 1,000 ft. on each side of the draw. This has been our practice for some years and has worked out very satisfactorily.

Company Publicity. — What single agency, such as a company publication, do you consider to be the most effective in giving "a soul to a corporation," or in other words, to humanize the company in the eyes of the public?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver.—I am of the opinion that a company publication of a weekly or semi-monthly issue is the most effective.

Change Orders on Suburban Lines.—In operating suburban trolley lines by the dispatcher system, do you furnish both motorman and conductor with change orders?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver.—We do not operate suburban lines by a dispatcher system. On interurban lines, where trains are operated to Standard Rules, train orders are handed to the conductor by dispatcher or given over the phone to the conductor, who writes them down on order blank, and in both cases hands them to the motorman.

Closing Bulkhead Doors.—In operating cars with bulkhead doors and vestibules, do you require the motorman to keep the bulkhead doors closed?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver.—Yes.

A. Gaboury, Superintendent, Montreal Tramways Co., Montreal.—Yes, at all times, except when backing car.

Automatic Crossing Bells.—How long should automatic crossing bells ring before the train arrives at the crossing?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver.—1,000 ft. or 1,500 ft. before the front end of trains reach crossing.

East Kildonan, Man., recently applied to the Public Utilities Commission of Manitoba, May 4, for an order directing the Winnipeg Electric Ry. to provide a better car service and to reduce fares within the municipality. Alternative proposals were submitted, and after hearing what the company's management had to say, judgment was reserved.

Sandwich, Windsor & Amherstburg Railway Franchise.

The S.W. & A.R., which has 40.78 miles of first track lines, is owned by the Detroit United Ry. Co. The railway includes the lines within the City of Windsor, the Town of Walkerville, and the line extending to Amherstburg, together with the Windsor & Tecumseh Electric Ry. For some considerable time past there has been a good deal of friction between the City of Windsor and the company respecting the car service, etc. The franchises within the city and in Walkerville expire in 1922. The question of taking over the lines in the near future has been considered with a view of linking them up with the Hydro Electric Power Commission of Ontario's projected lines. In this connection something like joint action is being taken by all the municipalities within which the company operates. P. Watt, Street Railway Commissioner of Cleveland, Ohio, met a committee of citizens of Windsor and Walkerville, May 3, and advised that complete municipal ownership was the real solution of all the difficulties which surrounded the situation. The present financial situation might render it impossible to carry out such a project, but it might be possible to arrange with the company to operate the line under municipal control. The committee finally decided to send a delegation to Toronto interview the H.E. P.C. of Ontario on the matter.

The delegation appears to have met the commission, in Toronto, for the Mayor of Windsor is reported to have said in an interview, on May 10, that the commission advised against the purchase of the lines at present, and further advised against the city undertaking at present any extensions of the lines which might be desirable in order to give a more adequate service. The commission, he said, pointed out that if the city took over the lines now, instead of on the expiry of the franchise, it would have to pay the value of the property as a going concern, that having been a court decision in a similar matter.

Winnipeg Electric Railway Co's Annual Report.

The report for the calendar year 1916 shows the following results:

Gross earnings from operation		$3,311,169.69
Operating charges		1,939,041.36
Net operating revenue for year		$1,372,128.33
Miscellaneous income		26,010.42
Gross income available to meet fixed charges		$1,398,138.75
Fixed charges:		
Sinking fund requirement	$ 60,000.00	
City percentage and taxes	201,797.01	
Other charges	691,090.29	
		952,887.30
Net income		$445,251.45

The net income, which decreased $35,742.33 for 1915, was equivalent to about 5% on the capital stock. The directors regret that owing to very substantial increases in all the materials necessary in the operation of the railway, gas and lighting departments, as well as to the serious competition of the jitneys in the city, the results for the year were disappointing. For these and other reasons, very careful consideration was given to the question of continuing the payment of any dividends. It was felt that, due to financial conditions and the impossibility of disposing of long term securities at prices to retire temporary loans, a discontinuance of dividends for the time being would strengthen the company's financial position and more quickly guarantee an earlier date for the resumption of such dividends. Having reached this conclusion, no dividend was declared during the year.

It is a matter for congratulation that as a result of a thorough investigation of all the properties by the J. G. White Engineering Corporation, of New York, its appraisal goes to show that the properties have been well maintained and taken care of, which points to the conservative treatment adopted by the board heretofore. The board has therefore adopted the appraisal in accordance with the statement made in its previous report, and is pleased to state that all depreciation has been taken care of to date. With the knowledge that the company's properties have so far been maintained to a high standard of physical efficiency, it is reasonable to assume that with a return to normal conditions the revenue from the various departments of the company's activities may be expected to show satisfactory increases. In accordance with the orders of the Public Utilities Commission in regard to the classification of accounts, the company's system of accounting has been altered to meet the commission's requirements.

The net income for the year, $445,251.45, added to the surplus brought forward from 1915, as adjusted, $682,824.47, makes a total surplus carried forward of $1,128,075.92.

At the annual meeting the directors were all re-elected and the officers were re-appointed.

The London and Port Stanley Ry's Funded Debt.

A Canadian engineer writes from Toronto: "The railway statistics issued by the Dominion Government recently containing the sworn statements of the different railways as to their financial condition and operating results, give for the London & Port Stanley a funded debt in bonds of $900,000, but include no return of either miscellaneous obligations or outstanding stock. The impression intended to be conveyed to the public is that these bonds are the sole debt of the railway, and, with no stock subscription or government aid, represent its cost, to the interest and sinking fund on which the net traffic returns are in part applicable. As a matter of fact, however, this large item of $900,000 only covers the cost of electrification, the new cars, and the 19 miles of additional sidings and turnouts, and the return ignores the very large original cost of the permanent way, the entries into cities, the terminals, docks, etc., previously represented for years in these annual statistical returns, as covered by the items, $1,332,834 of bonds and $527,158 of actual stock subscribed. A nominal rental of $20,000 is said to have been arranged, but this would afford only 1/10th% interest on this debt, as against the high rates originally paid and now prevailing.

"In order to induce the people of Ontario to believe that all future lines constructed by the Hydro Electric Power Commission will be profitable, this railway—the first to be constructed under the commission's auspices has been publicly announced by the commission as meeting all the interest on its bonds and other charges, and having a surplus in addition, when as a matter of fact, the large annual interest and sinking fund of the original cost are ignored. Evidently to appease the conscience of the commission, which appears to take a special care over this railway's affairs, and at the same time to further blind the people of Ontario, this long standing item of $1,332,854 of bonds on the road, appears in another part of the same government blue book, under the head of 'Aid to steam railways,' where the public is not expected to look for information about electric railways, and is now called 'Loans from municipalities,' while the share subscription of municipalities is given as $414,000. Is this straightforward dealing with the public?"

Electric Railway Legislation in Nova Scotia.

The Nova Scotia Legislature has passed bill 223 as follows:

1. Chap. 11 of the acts of 1911, amended by chap. 58 of the acts of 1914 is hereby amended by adding the following sections:

16 (d). The Board of Commissioners of Public Utilities, on application being made to it, and on being satisfied that the additional men required can be obtained, and that in other respects it is not unreasonable so to do, shall make regulations, limiting the number of days in every eight days, during which employes or any class of employes of any street railway company may be required or permitted to work, as such employes.

16 (e). The power conferred by the next preceding section may be exercised, notwithstanding the provisions of any agreement, respecting hours of labor, between such street railway company and its employes.

2. Clause (f) of sec. 22 of chap. 180 of the acts of 1914 is hereby repealed and the following substituted therefor:

(f) The Nova Scotia Tramways and Power Co., Ltd., shall, for the benefit of the working people issue tickets for use in the City of Halifax at a price to give 8 single trips for 25c during such hours at noon and evenings and subject to such terms and conditions as the Board of Commissioners of Public Utilities may approve.

Brantford Municipal Ry. Wages.

The Brantford Municipal Ry. Commission advanced conductors' and motormen's wages on the Brantford Municipal Ry. recently 2c an hour. Following is a comparison of the old and new rates:

	Old rate.	New rate.
1st month	16c	18c
Next 11 months	19½c	21½c
Second year	21½c	23½c
Third year	22½c	24½c

Ontario West Shore Ry. Liquidation.—T. Strothers, trustee, Dungannon, Ont., received tenders to May 12, for the material, plant and equipment on the partially built O.W.S.R. between Goderich and Kincardine, Ont. The principal items in the inventory were: 900 tons of 70 lb. steel rails, a large quantity of fish plates, 710 boxes of spikes, 135 boxes of bolts; 6 pairs of steel bridge girders, 25 to 70 ft. spans; 1 locomotive and 3 flat cars. The other property included scrapers, square and other timber, and fence posts. All the above was either stored along the right of way or in stock yards. In addition to this there was 14 miles of track completed, the materials on which can be taken up and removed.

Electric Railway Notes.

The London Township Council passed a bylaw, May 16, authorizing the London St. Ry. to run its cars from London to Broughdale, Ont., on Sundays.

Port Arthur, Ont., Civic Ry. employes asked, on May 13, for a raise of wages approximating 15%, with certain other concessions. The last increase was given in 1914.

The London and Port Stanley Ry. was reported recently to be arranging to ask for tenders for the suppliy of 30 tons of 80 lb. steel rails for switch lines. We are advised that the building of any additional track this year is not contemplated.

The London St. Ry., in a bulletin issued May 14, stated that the operation of its cars on Sundays is not remunerative and that if the cost of operation continues to increase the company will be compelled to ask for relief in some direction or other.

The British Columbia Electric Ry.'s honor roll of employes who are on active military service contains the names of 452 men. Of the total enlistments, 353 were from Vancouver and 99 from Victoria. Of these 17 have been killed, 25 wounded, 3 are prisoners of war, and 14 have returned.

The Toronto Ry. has placed several new cars in service during the past few weeks. The company notified the city recently that 40 out of the 50 cars ordered by the Ontario Railway and Municipal Board to be in service by May 1 were in operation, and that it was expected the remaining 10 will be running early in June.

The London and Lake Erie Ry. and Transportation Co. was stated recently in a press report to have offered to sell the rails on its line between London and Port Stanley, 28 miles, to be taken up and sent to France. We are officially advised that no such offer has been made. The rails are 60 lb. section, while 80 lb. are required for France.

The London & Lake Erie Ry. & Transportation Co. is reported to have invited the Dominion Government to make an offer for the rails laid in the company's tracks for shipment to France. The company operates an electric railway between London and Port Stanley, Ont, and is in the market for sale. Some details of the company's position were given in our last issue.

The Nipissing Central Ry., operated in the Cobalt district of Ontario, by the Timiskaming & Northern Ontario Ry. Commission, has purchased three second hand cars from the East St. Louis, Columbia & Waterloo Ry., East St. Louis, Ill. These cars are of the interurban type, about 50 ft. long, and will be used to maintain the service until new equipment can be ordered and built.

The Lethbridge, Alta., Municipal Ry., we are officially advised, includes a line to Henderson Park, which is not profitable except during summer. Two of the city cars are being changed so that they can be run in either direction without turning. They will be operated on this line by one man each, as far as profitable, and back, thus giving a service on the line where it is required.

The British Columbia Electric Ry. put its summer schedule in operation on its mainland lines, April 29. The principal feature of the service is on the Fraser Valley Division, where two trains a day in each direction are run through between Chilliwack and Vancouver, without change at New Westminster. On the Jardine line a special car leaves Jardine at 7.15 on Sunday evenings for Vancouver.

The case of the City of Toronto against the Toronto Ry. Co., in which the former asks for the committal of the company's General Manager to jail, or the company's sequestration, for contempt of an order of the court to supply the city with certain details, came before the court at Toronto, May 14, and the matter was ordered to stand until Sept. 15, to allow certain information to be obtained to supply the desired report.

The British Columbia Legislature has inserted a section in the Vancouver City bill giving the city council power to operate an electric power and light plant, but providing that it must apply to the Legislature again before it can enter into competition with the British Columbia Electric Ry. The company asked the Legislature for an opportunity to appear in protest against the insertion of the section, but was refused.

The North Vancouver, B.C., city council, on May 7, decided to enter into negotiations with the British Columbia Electric Ry. with the view of securing an agreement similar to that in force between the company and the City of Vancouver regarding the electrolysis of water pipes. This agreement provides for the city being compensated wherever it is proved that the electrolysis is due to the imperfect bonding of the company's railway.

The City of Saskatoon, Sask., is in the market for 3 single truck, double end cars for the Saskatoon Municipal Ry. The type desired is similar to those now in use in the city, 33 ft. long over all, with seating capacity for 32 passengers. The equipment includes two 40 h.p. Westinghouse motors, 2 K. 36 I. controllers, hand brakes, centre aisle, reversible cane seats, forced draught heaters, etc. The weight of each car is not to exceed 35,000 lbs.

A. K. Bunnell, City Treasurer of Brantford, Ont., addressing the Rotary Club members there, on May 10, on municipal administration, in referring to the public utilities, said: "The street railway, which had long been a source of public disgust and annoyance, was taken over nearly three years ago. The lines have been extended and improved, and at present the city has an investment of $430,000. It is not necessary to say that the public appreciate the change, as this is shown by the constant increase in traffic, and it is fairly to be assumed that this latest venture in public ownership is now on a business basis and self sustaining."

The London Street Ry. says in a recent bulletin: "While it may not be desirable at present to consider the matter of increasing the car fares in London, there are several ways in which some saving could be effected for the company without such additional expenditure on the part of the public as higher car fares would call for, such, for instance, as reducing the car service at those hours of the day when few people are riding. Such an economy would cause only slight inconvenience for those few passengers who may just miss a car and have to wait one or two minutes more than usual for the next one."

We are advised that the fire at the Windsor, Essex & Lake Shore Rapid Ry. shops and car barns, Kingsville, Ont., mentioned in our last issue, originated near the dry kiln user for drying armature, transformer and other coils. The oven is asbestos lined, so it is presumed that the heat set fire to something outside the oven. The electric locomotive no. 50 was damaked on the exterior and pantagraph stands, the cables and connections being entirely destroyed. Three passenger cars were badly damaged, roofs and pantagraphs being destroyed, and the interiors, including seats, rendered useless, from heat and water. The car barn and shops were damaged. The locomotive will be repaired in the company's shops, and the cars will be overhauled by the Preston Car & Coach Co.

Electric Railway Projects, Construction, Betterments, Etc.

Bathurst Electric & Water Power Co., Ltd.—The New Brunswick Legislature is being asked to amend the ocmpany's charter in several directions, and to give it authority to operate an electric railway in Bathurst and vicinity. The company controls a hydro electric power plant on Tetagouche River. J. P. Lager, Bathurst, N.B., is President and General Manager.

Brantford Municipal Ry.—The Brantford, Ont., City Council has appointed a committee to interview the commission in charge of the municipal railway in connection with the project to extend the line into the Terrace Hill district. (May, pg. 203.)

London & Port Stanley Ry.—A press report states that tenders will be asked shortly for 30 tons of 80 lb. rails for switching lines. (May, pg. 203.)

Montreal Tramways Co.—The Mayor is reported to have approved of the building of a car line to the top of Mount Royal. Plans are to be prepared by the City Engineer, and when these are approved the city council proposes to ask the Tramways' Commission to approve of them. (May, pg. 203.)

Moncton Tramways, Electricity & Gas Co.—We are officially advised in regard to projected extensions in Moncton, N.B., as follows: The company proposed that the city allow it to take up the present tracks on High St., from Main St. to John St., and from Weldon St. to High St. on Main St., and to replace them on Weldon St. from Main St. to John St., and from Weldon St. to High St. on John St., and to build a new line along John St. and Union St., to connect with the present line at Union and Botsford Sts. with a branch from Union and Church Sts., to Sunny Brae. This would give a much needed improvement in the service over that provided by the present lines. However, the city has decided to pave West Main St. and High St. from Main St. to the fire station on High St., about 7 city blocks on High St., and 5 city blocks on West Main St., and it is also going to pave King St. from Main St. to St. George St., on which the company has tracks. The city has so far refused

Sanitary Conveniences on Hamilton, Grimsby and Beamsville Electric Ry. On Nov. 2, 1916, the Ontario Railway and Municipal Board directed the company to file plans and specifications for sanitary conveniences on its passenger cars and at its station at Grimsby, Ont., which were approved by the board on Jan . 3, 1917, after having been altered as recommended by the board's engineer. On Apr. 27, the board ordered that the installation of the conveniences be completed by July 1.

to grant permission to the company to remove its tracks from High St., and unless it is allowed to make the change in the tracks as proposed, the company will not make any extensions this year. The company's share of the paving work proposed to be done will be so heavy that it is not willing to pay for the paving and make any extensions in addition. (May, pg. 203.)

New Brunswick Power Co.—The St. John, N.B., city council, April 30, decided to inform the company that a reasonably permanent grade would be established on Union St., which it was proposed to pave, and that the city would fill in between the track sections above the railway foundations if the company would raise its tracks to conform to the new grade. (May, pg. 203.)

Nova Scotia Tramways & Power Co.—A press report states that the company is making surveys for extensions of its lines, and that it is in the market for rails, ties, general construction material, and for additional rolling stock. (Dec., 1916, pg. 502.)

Port Arthur Civic Ry.—We are officially advised that the railway is placing a reinforced concrete liner adjacent to the rails on the track between Victoria and McVicar Sts. It is also contemplated to replace the present straight angle bars on rail joints with continuous joints and later on to place reinforced concrete liner adjacent to rails on the double track line on Main St., from Arthur St. to Bay St. An order has been given for 250 pairs of continuous rail joints for 80 lb. A.S.C.E. section. (May, pg. 203.)

Saskatoon Municipal Ry.—We are officially advised that owing to the present shortage of labor the proposed extension of track is being held over for the present. (May, pg. 203.)

Winnipeg Electric Ry.—In giving judgment on an application to order the company to build additional lines in the Morse district, Public Utilities Commissioner Macdonald stated, on May 4, that under existing financial conditions he could not issue such an order. (Oct., 1916, pg. 425.)

Windsor, Essex & Lake Shore Rapid Ry.—The Board of Railway Commissioners has reserved judgment on the application of the Town of Leamington, Ont., requiring the company to remove its tracks from North St. or as an alternative to cease obstructing the street. (Mar., pg. 113.)

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry., and allied companies.—All payments as between the companies not affecting the net earnings, hitherto included, are now eliminated.

	Mar. '17	Mar. '16	July 1, '16 to Mar. 31, 1917	July 1,'15 to Mar. 31, 1916
Gross	$456,626	$446,491	$4,067,005	$3,826,820
Expenses	356,178	355,103	3,194,692	3,170,134
Net	100,448	91,298	872,313	656,686

Cape Breton Electric Co.—

	Mar. '17	Mar. '16	Jan. 1 to Mar. 31,'17	Jan. 1 to Mar. 31,'16
Gross	$33,753.78	$27,866.33	$104,344.95	$90,625.14
Exp's	20,904.84	19,939.85	63,558.85	57,708.46
Net	12,848.94	7,926.48	40,786.10	32,916.68

Calgary Municipal Ry.—The annual summary of the finances of the City of Calgary, Alta., for the year 1916, issued by the Comptroller, shows that of the public utilities owned the municipal railway showed a profit of $28,722.09 and the electric light and power plant a profit of $15,254.42, while the waterworks and other utilities showed losses.

Edmonton Radial Ry.—The City Comptroller's report on the finances of Edmonton, Alta., for the year 1916, has the following reference to the E.R.R.: "The operation cost of the street railway has been reduced 27%, being $446,897 in 1914, and $339,208.50 in 1916. The result of the operations of this utility for the year is a loss of $115,597.66, which is $16,161.05 better than in 1915."

Lethbridge Municipal Ry.—From a report issued by the City Commissioner, it appears that for the four months ended April 30, the municipal railway made a profit over operating expenses of $3,356, against a profit of $3,462 for the same period of 1916.

London Street Ry.—

	Apr. '17	Apr. '16	Jan. 1 to Apr. 30,'17	Jan. 1 to Apr. 30,'16
Gross	$31,019.50	$34,013.43	$132,681.33	$133,442.14
Exp.s	25,934.30	25,489.48	98,660.07	92,344.78
Net	5,085.20	8,523.95	34,021.26	41,097.36

Toronto Ry., Toronto and York Radial Ry, and allied companies.—

	Mar. '17	Mar. '16	Jan. 1 to Mar.31,'17	Jan. 1 to Mar.31,'16
Gross	$991,192	$910,969	$2,926,228	$2,663,575
Exp's	515,586	477,031	1,538,605	1,408,863
Net	475,606	433,938	1,387,623	1,254,712

Toronto Civic Railway.—Total receipts for April, $21,791.45 against $17,876.80 for Apr. 1916. The total passengers carried during April was 1,284,195 compared with 1,065,508 during Apr. 1916.

Toronto Railway.—

	1917	City percentage	1916	City percentage
Jan.	$510,053	$ 76,508	$473,784	$68,847
Feb.	473,184	70,976	470,704	70,614
Mar.	531,080	105,857	518,555	97,237
Apr.	510,334	102,066	496,172	99,234
	$2,024,651	$355,425	$1,959,215	$355,932

Winnipeg Electric Ry.—The net earnings for March, after allowing for fixed charges, were $21,442.

	Mar.'17	Mar.'16	Jan. 1 to Mar.31,'17	Jan.1 to Mar.31,'16
Gross	$293,094	$296,500	$893,756	$887,310
Expenses	209,453	184,600	643,083	558,685
Net	83,641	111,900	250,673	328,625

Among the Express Companies.

The Canadian Ex. Co. has reopened its offices at Ruthilda, Sask., and Delburne, Alta.

J. N. Johnston has been appointed claim agent, Eastern Division, Dominion Ex. Co., Toronto.

The Dominion Ex. Co. has opened offices at Musquodoboit, N.S.; River Henry, Que., and DeWinton, Alta.

W. A. McDonald has been appointed acting route agent, Western Division, Dominion Ex. Co., Winnipeg.

The Canadian Ex. Co. has reopened its office at Camp Borden, Ont., and has appointed H. H. Cheeseman as agent there.

Wells, Fargo & Co. have placed their express service in effect over the London & Port Stanley Ry., and have appointed E. G. Crook agent at London, and W. H. McPherson agent at Port Stanley.

The Board of Railway Commissioners issued order 26090, May 8, ordering that order 25975, Mar. 29, which prescribed the boundaries within which tolls of express companies shall include collection and delivery in Toronto, published in our last issue, be amended by striking out the words, "thence following the present eastern city boundary," in the third and fourth lines of clause 1, par. 2, and substituting therefor the words, "Summerhill Park Ravine," and by striking out the words, "except southerly," in the sixth line.

Telegraph, Telephone and Cable Matters.

W. T. Leslie, heretofore chief operator, Great North Western Telegraph Co., Quebec, Que., has been apopinted local manager there, vice R. V. Aubin, deceased.

C. L. Leighty has been appointed Superintendent, Ontario District, C.P.R. Telegraphs, Toronto, vice H. J. Lillie, who has been appointed chief operator there.

C. E. Lillie, heretofore Office Manager, Great North Western Telegraph Co., Toronto, has been appointed Manager there, in charge of inside business.

G. Hogarth, heretofore Toronto Manager, Great North Western Telegraph Co., has been appointed Commercial Manager there, in charge of the company's outside business in the city.

A standing committee of the House of Commons reported to the House, May 15, that it had had under consideration a bill to incorporate the British America Telephone & Telegraph Co., and had agreed to report same with amendments, and with a recommendation that the name be changed to the Eastern Telephone & Telegraph Co.

The Western Union Telegraph Co. is enlarging its office accommodation at St. John, N.B., by taking over for its own use the whole of the building at the corner of King and Prince William Sts., of which it had occupied a portion. In the operating room on the top floor, five sets of high speed automatic multiplex repeaters are being installed for traffic between St. John, New York, North Sydney and Montreal. The basement is being equipped with shower baths, dressing rooms, etc., for employes.

The New Brunswick Telephone Co.'s annual meeting was held at Fredericton, May 18, when the report for 1916 showed assets of $2,170,019.05, and liabilities of $2,145,130. The net revenue for the year was $109,324.84. The officers and directors for the current year are: S. H. White, President; Hon. F. P. Thompson and F. B. Black, Vice Presidents; A. W. Bennett, R. O'Leary, L. B. McFarlane, A. R. Slipp, W. B. Snowball, R. B. Emerson, F. B. Carvell, J. M. Robinson, F. W. Sumner, G. W. Ganong, J. L. McAvity and H. P. Robinson.

United States Shipping Committee.—The Council of National Defence at Washington has created a committee on shipping, consisting of Chairman Denman of the Federal Shipping Board; P. A. S. Franklin, President, International Mercantile Marine; H. H. Raymond, President, Coastwise Shipping Association; E. T. Chamberlain, Commissioner, Bureau of Navigation, Department of Commerce; D. T. Warden, Manager, foreign shipping department, Standard Oil Co.; L. H. Sherman, Vice President, W. R. Grace & Co.; E. M. Bull, Vice President, E. M. Bull & Co.; and F. C. Munson, President, Munson Steamship Line. The function of the committee is to advise with the U. S. Shipping Board and to report, through Mr. Denman, to the council as to the best methods of increasing tonnage available for shipment to the allies.

Calvin Austin has been elected President, Eastern Steamship Lines, Inc., recently reorganized, and G. W. Sterling has been appointed General Traffic Manager at New York. The company operates a line between St. John, N.B., and Boston, Mass.

Marine Department

Government and other Shipbuilding Throughout Canada.

Canadian Railway and Marine World for April and May contained very full particulars of all information then available in regard to shipbuilding in Canada for Canadian and British Governments. As stated in the May issue, the Imperial Munitions Board had then placed orders at various points between Montreal and Victoria, B.C., for 26 steel steamships, ranging from 2,900 to 8,800 tons capacity, and with a total tonnage of 130,000. The board has placed and is still placing orders for wooden steamships, ranging from 3,000 to 3,500 tons capacity, and the number to be ordered will only be limited by the capacity of Canadian shipbuilding yards to complete them within the required time. In consequence, there is unprecedented activity in Canadian shipyards from the Atlantic to the Pacific, and many new shipbuilding industries are starting up.

W. I. Gear, Vice President of the Robert Reford Co., steamship agents, etc., Montreal, has been appointed Director of Steel Shipbuilding, under the Imperial Munitions Board, to deal with all questions relating to the construction of steel merchant vessels in Canada for the British Government. He has an office in the Transportation Building, Ottawa.

Any wooden shipbuilding which may be done in Eastern Canada will be handled from the Imperial Munitions Board office in Ottawa. As stated in our last issue, R. P. Butchart, of Victoria, B.C., has been appointed by the Imperial Munitions Board to take charge of the organization of the wooden shipbuilding industry in British Columbia, with the title of Director, and has established a local office there for that purpose. He was connected with the cement industry in Ontario for a number of years, being associated with Mr. Kilbourne, of Owen Sound. Their interests were sold to the Canada Cement Co. some years ago, after which Mr. Butchart and associates organized the Vancouver Portland Cement Co., which has a plant near Victoria, B.C., and of which he is President and General Manager. J. W. Troup, Manager, B. C. Coast Steamship Service, C.P.R., Victoria, has been loaned by that company to assist Mr. Butchart, and has been appointed Assistant Director. Messrs. Butchart and Troup returned to Victoria, May 15, from Ottawa, accompanied by W. H. Stewart, Assistant Purchasing Agent, Imperial Munitions Board, and gave the following statement to the press:

"The Board has decided upon the building in Canada of a standard type of vessel, 250 ft. long, 43½ ft. beam and 25 ft. deep, with a deadweight capacity of about 2,800 tons, on a draught of 21 ft. The vessels are to be built very strongly, with box girder stelsons. They will have a deep tank forward for water ballast. They are to be propelled by steam with triple expansion engines of about 950 i.h.p. The matter of geared turbines from England is being considered for some of the ships. The vessels are to be built of Douglas fir, to Lloyd's requirements for A1 classification. The authorities are in favor of concentrating on steel shipbuilding in Canada, rather than on wooden ships, it being considered preferable to build boats of steel construction. Messrs. Butchart and Troup have, however, placed the facilities of British Columbia before the Board, and as soon as they have had an opportunity of lining up the situation in B.C., they will report to the Board as to the building that could be undertaken here. The programme that has so far been outlined is not very extensive. It remains to be seen what facilities and what inducements B.C. can offer to the authorities."

The Minister of Trade and Commerce said in the House of Commons on May 11: "I cannot go into particulars, but I can say that today every shipyard in Canada which is able to build ships, and is equipped therefor, has not only the opportunity, but has the actual contracts for building every ship and every vessel it can turn out, and that today the building of vessels for the specific purpose of warding off and fighting the submarine peril is being carried on in all the shipyards in this country. And in regard to the building of wooden ships, an arrangement has been completed and is being carried out whereby anybody or any company that can undertake to build wooden ships and complete them within a certain time will get an opportunity to do so and will be assured that over and above the cost of building the ships they will have a reasonable profit guaranteed to them." In this connection the Finance Minister has agreed to loan the British Government $10,000,000 to pay for wooden vessels to be built in Canada.

In connection with shipbuilding in Canada for the British Government, it is interesting to note what is being done in the United States. The U.S. Shipping Board advised Canadian Railway and Marine World on May 1 that it contemplated having 1,000 wooden steamships built, but that it was very likely that number would not be reached, and that the number of wooden vessels which might be built would be augmented by steel ones up to the number of approximately 1,000. We have since been favored with a copy of the specifications for the construction of a standard wood steamship, yellow pine, issued by the U.S. Shipping Board, Emergency Fleet Corporation, which provides the following dimensions: Length over all, 281½ ft.; length, fore side of stem to after side of rudder post, 268 ft.; beam over planking, 46 ft.; depth moulded at side of upper deck, 26 ft.; load draught from bottom of keel shoe, 23½ ft.; total estimated deadweight, 3,500 long tons; sea speed, loaded, 10 knots. The U.S. Shipping Board has also issued standard propelling machinery specifications for single screw reciprocating engine, coal burning, wood steamships; for twin screw reciprocating engine, coal burning, wood steamships, and for single screw geared turbine, coal burning, wood steamships.

Major General Goethals, who is connected with the U.S. shipbuilding work, is reported to have stated at the American Iron and Steel Institute's meeting in New York, May 26, that the proposal to build a thousand 3,000-ton wooden steamships in 18 months is simply hopeless, that he asked permission to change to steel, and that this has been granted.

Shipbuilding Notes.

A shipbuilding plant is being projected at Port Alberni, B.C.

The Kingston Shipbuilding Co. is reported to have purchased the Kingston Foundry Co.'s property for incorporation in its own plant.

The Shipbuilders' Corporation of Toronto, Ltd., has been incorporated under the Dominion Companies Act, with authorized capital of $250,000.

The Minister of Marine stated in the House of Commons recently that 48 vessels are being built in Nova Scotia by private individuals.

The Goderich Dry Dock & Shipbuilding Co., Ltd., has been incorporated under the Dominion Companies Act, with office at Toronto, and an authorized capital of $1,000,000.

The Canadian Car & Foundry Co. erected a car building plant at Fort William a few years ago, which has not been operated. It is said that the company may utilize it for shipbuilding.

The Sydney Foundry & Construction Co., Sydney, N.S., is reported, on the authority of W. E. Clark, an official of the company, to have purchased a floating dry dock suitable for the smaller class of steam and other vessels frequenting the harbor.

Pacific Shipbuilding Co., Ltd., has been incorporated under the Dominion Companies Act with an authorized capital of $50,000, and office at Vancouver. The incorporators include J. C. Shields, lumberman, Vancouver, and J. T. Robinson, broker, Kamloops.

Alfred Wallace, of Wallace Shipyards, Ltd., North Vancouver, B. C., is reported to have announced on returning there recently from Ottawa that the company had contracts for two steel steamships for British interests and for eight wooden ones for the Imperial Munition Board.

The Tusket Shipbuilding Co. is reported to have completed its organization, and to have acquired several old shipyards at Tusket, N.S., and to be negotiating for other yards. It is stated to have four vessels under construction at Shelburne, and four at Liverpool, N.S.

It is reported that a shipbuilding plant is being built at Catalina, Nfld., at a cost of about $2,000,000, and that wooden shipbuilding is extremely busy throughout the colony. A number of vessels are being built there under a bounty of $20 a ton, as provided in the government's act of last year.

The Toronto Board of Control, at a meeting, May 9, adopted a resolution calling upon the Dominion Government to establish, equip, maintain and operate a national shipbuilding plant in Toronto. The Minister of Trade and Commerce replied that it was not the government's intention to do so.

Welland Shipbuilding Co., Ltd., has been incorporated under the Dominion Companies Act, with an authorized capital of $200,000, and office at St. Catharines, Ont. It will carry on its operations at Welland, where it has leased the shipyard and present boiler shop of M. Beatty & Sons, Ltd., who are carrying on their other business as usual. It is said to have a contract for three cargo steamships of full canal size.

Chester Basin Shipbuilders, Ltd., has been incorporated in Nova Scotia to build

sailing vessels at Chester Basin. The officers are: A. H. Zwicker, Lunenburg, President; Wm. Duff. Vice President; H. Oxner, Secretary Treasurer; J. J. Kinley and E. F. Zwicker, directors. The company is stated to have orders on hand for two vessels, which are being built under the supervision of G. A. Gardner, of Liverpool, N.S.

The Pacific Shipbuilding Co. is reported to have been incorporated under the Dominion Companies Act and to be about to establish a yard opposite New Westminster, B.C., on the south side of the Fraser River. Capt. J. T. Robinson and J. C. Shields, of Kamloops, B.C., are among the promoters, and the former is reported to have stated in Vancouver, May 18, that they had been given contracts by the Imperial Munitions Board.

The Falmouth Shipbuilding & Transportation Co., Ltd., incorporated recently under the Nova Scotia Companies Act, is reported to have acquired a site at Falmouth, N.S., for a shipbuilding plant. The location is said to be at the junction of the river and the passenger bridge, adjacent to the Dominion Atlantitc Ry. and the Hants Manufacturing Co.'s saw mill, where sufficient lumber has been accumulated for the construction of the first vessel, which will be commenced shortly and launched early in the autumn. The officers are: E. E. Armstrong, President; F. W. Dimock, J. L. Sexton, T. B. Aikins and T. A. Mosher, directors; A. P. Clark, Secretary-Treasurer.

Stranding of the s.s. Maskinonge.

An investigation was held at St. John, N.B., May 9, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Lieutenant-Commander A. J. Mulcahy, R.N.R., and Capt. Jas. Hayes, as nautical assessors, into the causes of the stranding of William Roberts & Co.'s s.s. Maskinonge, under charter to the Dominion Coal Co., in St. John harbor, Apr. 28. The evidence showed that on entering the harbor it was discovered that the berth the vessel was to occupy was taken, and therefore it was decided to anchor, which was apparently effectively done, but five minutes later the vessel dragged her anchors from a broad to an acute angle, and eventually grounded gently on a bank on the starboard side. The method of anchoring was adopted with the view of preventing sheering, but the master acknowledged that if the anchors had been placed at a more acute angle, they would have been more effective. The court found that under the conditions existing the master and pilot did the best they could. A mistake, or error of judgment, was made as to the angle at which the anchors were placed, but the error was not of a culpable nature, and therefore the court did not hold the master or pilot at fault nor censure them.

The Dominion Coal Co.'s Marine Superintendent eulogized the harbor and Government officials, who rendered all possible help in releasing the vessel, which was eventually refloated without any apparent injury.

Renaming German Vessels.—The two interned German commerce raiders taken over by the United States Government will bear the names of famous German generals who served under Washington in the Revolutionary War. The Kronprinz Wilhelm will be renamed the Baron von Steuben, and the Prince Eitel Frederick will be renamed the Baron de Kalb. Both vessels will be put into the U. S. service.

Grounding of the s.s. Lord Antrim.

Judgment was rendered at Sydney, N.S., May 10, in the matter of the grounding of the Irish Shipowners Co.'s s.s. Lord Antrim, May 3, while en route from Baltimore, Md., to Louisburg, N. S., by Capt. L. A. Demers, Dominion Wreck Commissioner, and concurred in by Capts. A. J. Morrison and J. D. MacKenzie, as nautical assessors.

It was found, after weighing the evidence, in which there was no contradiction, that it was the court's duty to accept the evidence given relating to weather, courses, distances of land from the vessel and the last bearing taken prior to grounding, and also as to the striking of an obstacle not visible to the crew, and considered by them to be a submerged obstacle, on account of orders issued owing to war conditions not allowing of verification of these details by the log book. The court, therefore, on this account, came to the conclusion that the vessel struck a submerged object, and exonerated the master and officers from blame. The court, however, commented on certain phases of the evidence, which could not be brought to light satisfactorily, as follows—the reduction of speed due to bad coal; that after leaving Cranberry Island, no allowance was made for possible leeway; that land was 7½ miles distant, and that the master acknowledged having seen surf breaking. Without reflecting on the evidence, these points mentioned were not clear to the mind of the court.

The court pointed out that there is a tendency of the tide to throw vessels in toward land from Cranberry Island to Fourchu, especially during such conditions of wind and sea as existed at the time of this casualty.

The Malahat Motor Ship Co., Ltd., incorporated recently with $100,000 capital and office at Vancouver, B.C., is a subsidiary of H. W. Brown and Co., Ltd., which is associated with Canada West Coast Navigation Co., of which H. W. Brown is General Manager. The company has a vessel under construction by Cameron-Genoa Shipbuilders Ltd., Victoria, of the same type as those being built for Canada West Coast Navigation Co., an illustration of which was given in our last issue. This vessel will be named Malahat and is expected to be ready for operation by September. It is understood that H. W. Brown & Co. Ltd. represent the western interests of those interested in Canada West Coast Navigation Co., and who are mainly associated with Canada Steamship Lines, Ltd. A second vessel is stated to be under construction for the same company, to be named Esquimalt, and these are to be registered at Victoria.

U. S. Water Supply Regulations on Great Lakes Vessels.—As mentioned in previous issues, the U.S. authorities have made certain regulations respecting water for drinking and culinary purposes on Great Lakes vessels, these being applicable to Canadian vessels calling at U. S. ports, as well as to U. S. vessels. The Dominion Marine Association took this question up with the Dominion Government, which has made an arrangement with the U. S. authorities for the suspension of the regulations so far as Canadian vessels are concerned, until 1918, on the understanding that the Dominion Government shall adopt similar regulations to the U. S., in which event certificates that Canadian vessels have complied with the Dominion law, will be accepted.

The Reid Wrecking Co. Changes Hands.

The Reid Wrecking Co., with plants at Sarnia, Ont., and Port Huron, Mich., including all vessels and properties, are in course of reorganization with a view to their transfer to Canadian interests. R. M. Wolvin, of Winnipeg, appears to be chiefly interested in the transfer, and press reports stated that the properties were being acquired in the interests of Canada Steamship Lines, Ltd., with which Mr. Wolvin is associated. This, however, is officially denied.

The Reid Wrecking Co. was incorporated under the Ontario Companies Act in 1903 by Jas. Reid, father of J. T. and W. H. Reid, the present Treasurer and Secretary respectively of the company. On his death in 1913 he owned 50% of the stock. The company does a large business and owns a considerable wrecking plant, including tugs and dredges and a dry dock at Port Huron, Mich., which cost about $200,000. The stock has been chiefly held by the Reid family. D. Milne and F. F. Pardee are directors with nominal holdings.

The dry dock at Port Huron measures 375 ft. on blocks, 400 ft. over all, 75 ft. wide at bottom, 100 ft. at top, with 65 ft. at entrance and 16 ft. depth over sill. The vessels owned by the company include tugs James Reid, Sarnia City, S. M. Fischer; propellers J. M. Diver, John B. Ketchum 2nd, Inland, Manistique, Matoa and Spokane; barge Magnetic, and schooners Belle Hanscom and John Kilderhouse.

The New York State Barge Canal.

This canal was opened for traffic between Oswego, N.Y., on Lake Ontario, and from Whitehall, on Lake Champlain, to Troy, on the Hudson River, May 15, and it is announced that the entire canal system will be ready for traffic by May, 1918. It is anticipated that the opening of the canal will do much toward the relieving of congestion in freight at western freight yards, and, to some extent, lower the cost of foodstuffs, owing to the cheaper transport. It is stated that the rate on wheat will at least be cut in half, as between Buffalo and New York, a similar effect being achieved on ore between Port Henry and New Jersey. Arrangements have already been made for the operation of a number of barge lines between Buffalo and Albany, making daily stops at the more important centres on the Erie Canal. Other lines will run on the Champlain Canal.

The Canal Board is pushing the completion of the work, and has suspended a contract in the western portion, owing to the contractor not making the progress expected. This contract has been taken over by the state. For this year, the canals will be used between Troy and Oswego, Troy and Lake Champlain, and the Erie Canal from Troy to New London, where the old channel will be used for short stretches to Rochester, and then on to Tonawanda, etc.

Purchase of Steamships by Dominion Government.—The Minister of Railways stated in the House of Commons recently that the prices paid for the steamships J. A. McKee and Thomas J. Drummond, which, as stated in Canadian Railway and Marine World for May, were bought under authority of order in council of April 17, to carry coal from Sydney, N.S., to St. Lawrence River ports, were $500,000 and $515,000 respectively.

Canada Atlantic Transit Co's Operation by G.T.R. Authorized.

The Interstate Commerce Commission gave the following decision at Washington recently:—In Lake Line Applications under Panama Canal Act, 33 I.C.C., 699, the petitioner the Grand Trunk Ry. Co. of Canada was denied permission longer to operate the Canada Atlantic Transit Co., a boat line which it owns and operates on the Great Lakes. Pursuant to a petition to rehear, the order entered with respect to the C. A. T. Co. was set aside and the case re-opened for further hearing by order dated Mar. 29, 1916. A further hearing was held Sept. 27, 1916, at which time an important jurisdictional question was urged and further evidence was introduced in support of the contentions previously advanced by the petitioner.

The G.T.R. Co. is a railway corporation organized under the laws of the Dominion of Canada, owning and operating various lines of railway within Canada, and by act of the Parliament of Canada dated May 16, 1905, was specifically authorized to acquire the capital stock of the Canada Atlantic Ry. Co. and Canada Atlantic Transit Co. The Canada Atlantic Transit Co. operates a line of boats from Depot Harbor Ont., on Georgian Bay, the western terminus of the C. A. Ry., to Chicago, Ill., and a line of boats from Depot Harbor to Milwaukee, Wis., plying on the International Boundary waters between the United States and Canada. The petitioner contends upon rehearing that the refusal to permit it longer to operate its boat line invades the right of free navigation of the International Boundary water between the U. S. and Canada, which is preserved to the inhabitants of each of said countries by treaties which have been in force for many years, that the Panama Canal Act does not specifically provide that this treaty right shall be curtailed; that accordingly the Panama Canal Act cannot be construed as having any application to the ownership of the petitioner in the C.A.T. Co.; and that this commission consequently has no jurisdiction to deny petitioner power longer to operate. In the view we now take upon the merits of this application, upon rehearing, under which the water service of the C. A. T. Co. as now operated may be extended, we deem it unnecessary to consider or decide this question.

The petitioner upon rehearing again contends that it does not compete with its boat line within the meaning of the provisions of the Panama Canal Act, and that this commission is without jurisdiction in the premises. The petitioner, in addition to the lines of railway which it owns and operates in Canada, owns and operates certain lines of railway within the United States which reach Chicago, connecting with its Canadian lines. The petitioner joins in through routes and publishes joint through rates in connection with the lines from Chicago to Milwaukee, the other port served by its boats. In Lake Line Associations under the Panama Canal Act, supra, we held that this condition brought about a transportation situation under which the petitioner does or may compete with its boat line within the meaning of the provisions of the Panama Canal Act. Nothing shown upon the rehearing would warrant our changing this finding.

The Canada Atlantic Transit Co. is a so called differential line. Because the route from eastern territory to the ports served by this line is more circuitous than that of the more direct route, a somewhat lower scale of rates is made applicable via this line. For many years the transit company's rate has been lower by 10c per 100 lbs for 1st class traffic from New York to Chicago, than the rate of the so called standard lake and rail routes, and proportionately less for traffic of other classes. It appears from statements filed upon rehearing that the rates via the standard lake and rail routes from New York to Chicago are higher than the transit company's rates on the different classes of traffic as follows, viz.: On 1st class, 19.2%; 2nd class, 17.4%; 3rd 13.6%; and 6th class, 10.5%. The standard all rail rates from New York to Chicago are higher than the transit company's rates on the six classes of traffic, as follows, namely: On 1st class, 51.5%; 2nd class, 48.5%; 3rd class, 50%; 4th class 41.5%; 5th class, 43.2%; and 6th class, 38.4%.

The transit company operates three steel vessels, having an aggregate net registered tonnage of 7,118 tons and a cargo capacity of 14,000 net tons. During 1914 it carried 348,727 tons of freight, and during 1915, 321,824 tons. During 1915, up to Aug. 31, it carried 184,738 tons. The transit company provides approximately three sailings a week, both eastbound and westbound, during the season of navigation, with substantially regular service. During 1915 its boats were in commission 205 times and made 68 round trips. During the last season, up to Aug. 31, its boats had made 34 round trips. The traffic transported has its origin or destination at numerous points throughout a large territory, in Canada and in the United States, including the terminal points Chicago and Milwaukee, and points generally in Wisconsin, Illinois, Iowa, Nebraska, and Kansas, and the southwest territory, New England, New York, and Canada, and the Canadian provinces, and also points abroad from which traffic is imported or to which it is exported. During the early part of the season of navigation last past the transit company handled over 34,000 separate and distinct consignments of freight. The traffic representative of many regular shippers and consignees located in the territory who have availed themselves of the service of the transit company appeared at the rehearing and testified to the satisfactory nature of the service, and uniformly expressed the desire that it be continued.

The service of the transit company was originally established to provide a western connection for the Canada Atlantic Ry., which otherwise would have ended in a transportation cul de sac. Thirty per cent. of the gross earnings of the C. A. R. during the season of navigation and 18% of its earnings throughout the year are received on traffic destined to or received from the transit company. The service of the transit company was established solely as a supplement to and extension of the C. A. R. The traffic and business conditions in the territory served by the C.A.R. have materially changed since its organization. Formerly that territory was a large producer of timber and lumber products, with the traffic incident to such production; but now that the timber resources have been largely depleted this traffic has greatly decreased and there has not been, as yet, agricultural development or other local development which furnishes traffic to replace that formerly incident to the lumber projects. It is urged that the transit company is of increasing importance to the C. A. R., which is an integral part of the G. T. system. The transit company has always operated at a deficit after the payment of fixed charges. In 1913 the deficit was $704,574; in 1914 it was $860,453.

The Canada Atlantic Ry. has always absorbed out of its rail revenue the deficit resulting from the operation of the transit company, because there has been Canada Atlantic Transit Co Operation .. no other way to secure the maintenance of the service performed by the transit company or to secure an equivalent water service west of Depot Harbor for the interchange of traffic to and from Lake Michigan ports. The Canada Atlantic is the only railway which reaches Depot Harbor. Neither the petitioner nor the C.A.R. has ever refused to interchange traffic at Depot Harbor with any other vessel or carrier by water, or to form through routes or make joint rates or enter into arrangement for divisions of rates on an equitable basis with respect to the handling of lake and rail traffic. No request has ever been made to either of them for the making of such arrangement. It is stated on behalf of the petitioner that it heretofore has been, and now is, ready to make reasonable and and proper arrangement for the establishment of such through route and joint rates in connection with any responsible water carrier or vessels carrying package freight to and from a connection with it at Depot Harbor, even if the service of the transit company continues under its present control.

It is stated on behalf of the petitioner that the elimination of the interest of the petitioner in the transit company would necessarily result in a discontinuance of the water service of that line, which is the only remaining differential rail and lake route to Lake Michigan ports. It is also stated that the Lake Line Association has been dissolved. It is said that the petitioner has not diverted nor attempted to divert traffic from the boats of the transit company, and that neither the petitioner nor the transit company has acquired any monopoly of or lessened any competition upon the water route served by the transit company, and that the transit company has actively competed and will continue actively to compete with other existing rail and lake routes upon the great lakes.

From a full consideration of the record, upon rehearing we find that the existing service by water of the C. A. T. Co. is being operated in the interest of the public, and is of advantage to the convenience and commerce of the people, and that an extension thereof will neither exclude, prevent, nor reduce competition on the route by water here under consideration. The C. A. T. Co. will be required to file its tariffs in accordance with the provisions of the act to regulate commerce as amended by the Panama Canal Act. An order will be entered in accordance with the views expressed herein.

British Government War Risk Insurance.—The Imperial Colonial Office has announced that, as from Apr. 23, the rates of insurance under the Government war risks insurance scheme are as follows: Hulls, a voyage, 2½%; a round voyage, 5° ; 91 days time policy; 5° ; cargo, 105 shillings %.

Canada West Coast Navigation Co's Auxiliary Ships.

In view of the pressure on shipbuilding which is at present being exercised, and the regeneration of wooden shipbuilding, the performances of what may be termed the pioneers of the new type of auxiliary sailing vessels, are being watched with considerable interest. While an extensive programme of wooden shipbuilding is being undertaken in Canada, and also in the United States, the whole project is being very freely criticized, and it is being urged that such building should not be undertaken to any great extent, owing to the lack of seasoned lumber, that the vessels would be of low speed and not suitable for avoiding the submarine danger, that they could not be adequatel yarmed, and that steel vessels are the only suitable means of meeting the emergency. Whatever arguments may be brought to bear on the subject, the fact remains that Canada West Coast Navigation Co., controlled chiefly by men associated with Canada Steamship Lines, Ltd., have had sufficient confidence in vessels of this type, and nearly a year ago placed orders on the British Columbia coast for the construction of eight auxiliary ships. Several of these have been delivered, and the balance are approaching completion. They are designed chiefly for the transportation of lumber, but without doubt could be so modified as to meet the exigencies of the demands for general cargo carriers. The recent trials of the ship Margaret Haney, show that a speed of 10 knots an hour can be obtained with sail and power combined, with a breeze of about 3 Beaufort scale.

The auxiliary power equipment, which is the same on each of the company's vessels, consists of two 160 h.p. Bolinder type, semi Diesel engines, the horse power being developed at 225 revs. per min. giving a speed under power alone of about 3 knots. The engines are of the two cycle type, and are fitted with a direct reversible with a one way clutch only, thus allowing the propeller to run free when the vessel is under sail. The clutch is operated by compressed air. The reversing gear is very simple, being controlled by one lever, which automatically stops the injection of fuel from the pumps, and as the engine comes to rest, injects a single jet of fuel into the cylinder, as the piston is on the up stroke. The pressure thus caused brings the piston to rest and starts it on the down stroke before it reaches the top centre. This is a new system and has not been used previously on engines of this type. The main fuel pumps can draw fuel from any one of the six main fuel tanks, and discharge into the service tanks, and can also be used for trimming purposes by discharging back into any of the tanks. The fuel pumps are in duplicate, and the filters on the main fuel line are so arranged that either of them can be taken out for cleaning without interfering with the flow of fuel to the main engines. All the auxiliary engines on the vessels, including windlass, four winches, and pumps, can be operated either by steam or compressed air. Steam is furnished by a donkey boiler under the forecastle, and the air by two compressors on the main engines and one auxiliary compressor driven from the electric lighting plant. Crude oil is used as fuel, and the consumption when the engines are developing 160 h.p. is a little over 11 gallons an hour. The tanks have capacity for 30,000 gallons of fuel.

Electric light is furnished by a Canadian Westinghouse generator, driven by an 8 h.p. engine of similar type to the main engines. The officers' quarters are located under the poop deck and the crew's quarters are placed forward. The crew consists of 18 hands, including master, two mates, three engineers, one donkey man, two apprentices, seven seamen, cabin boy and cook.

A photograph of the ship Mabel Brown was reproduced in Canadian Railway and Marine World for May, and this illustration can be taken as typical of the other vessels under way for the company.

Shallow Draught Vessels for Indian Service.

Orders have been received recently by Yarrows, Ltd., Victoria, B.C., for the construction of the hulls of two shallow draught, stern wheel steamboats, for use in the shallow rivers and swampy regions of India, where navigation is difficult. This will make four of this type of vessel built at Victoria. One built early in the year is now in India, a second is ready for shipment, and the remaining two are in hand at the yards. The steel hulls only, with superstructure and rudder forgings, are made at Victoria, the engines, boilers, etc., being made by the parent company in Glasgow, Scotland, and shipped direct to India. The hulls are fabricated in Victoria and erected there, the port and starboard sides being painted with distinguishing colors, and all parts carefully numbered and named. They are then dismantled and crated for shipment to destination. The hulls are built of light weight steel, with steel main deck and holds for cargo. The upper deck, which is of wood, is for the cabins and passenger accommodation, with dining room and other conveniences, and above this is a galvanized iron roof. The wood work is done in India by the purchasers. The aim in the construction of these vessels is to have strength combined with lightness, so as to obtain the least possible draught when afloat. The hull is strengthened by 6 king posts of H section steel, 3 on each side, braced together with diagonal trussing of 3 in. double angle steel bars, also a longitudinal bulkhead in the centre running forward to aft, with deck stringers under the main deck. There are 8 transverse bulkheads, making the hull into watertight compartments, so that in the event of one of the compartments being punctured, the remaining ones will keep the vessel afloat. The vessels draw 18 in., light, and when loaded with 100 tons, approximately 36 in., and are engined for a speed of 9 to 10 knots.

Welland Canal Accident.—The s.s. Natironco, owned by A. B. Mackay, Hamilton, while upbound light, on May 3, struck and carried out the two head gates of lock 3 of the Welland Canal. The rear of the bank on the easterly side of lock 2 was partly washed away by the rush of water. Two spare gates were placed in position and locking was resumed after an interruption of 11 hours. The cost of repairing the damage done is about $4,000. The cause of the accident was due to the snubbing wire getting caught in the compressor, and the vessel helper being unable to put it around the mooring post. When this was discovered, the master signalled to the engine room for a reverse, but the engineer put the engines ahead. They were eventually reversed, but too late to avert the collision with the gates.

The U.S. Shipping Board Criticised.

During the past two or three years, considerable criticism has been directed at the shipping legislation undertaken by the U. S. government. The Pacific Marine Review, in commenting rather pointedly on some of the work undertaken by the Shipping Board, refers to an instance which may be enquired into, and in which Canada is interested, as follows: "It will be remembered that one clause of the shipping act provides that U.S. goods or shippers are to be in no way discriminated against by foreign ships. There is opportunity under this section of the act for innumerable court actions. As an instance of the class of cases the Shipping Board is going to try there is the case of the White Star-Dominion Line's apple shipments from Portland, Me. From late in April to Dec. 1, the White Star-Dominion vessels run out of the St. Lawrence and the other months of the year from Portland, where they receive nearly their entire cargo from the G.T.R. The White Star-Dominion Co. has a contract for Canadian apple shipments which uses up most of their freight space for months at a time. They refuse to take U.S. apple shipments because they have no space for them if they live up to their contract with the G.T.R. The only reason the steamships of this line go to Portland, in the winter rather than to St. John, N.B., is because of their agreements with the G.T.R.. We understand the Shipping Board is to institute proceedings against the White Star-Dominion Line for discrimination against U.S. shippers. If these proceedings are successful the only losers will be the G.T.R. and the City of Portland. The Canadian shippers may be inconvenienced also; in fact, everyone concerned will be injured with the single exception of the concern against which the action has been taken. It does not look like a very sensible proceeding. Here we have goods of Canadian origin, shipped on a Canadian railway and carried on a British-Canadian ship. In transit, the goods pass through a small section of U.S. territory and are trans-shipped at a U.S. port, thus giving a U.S. city the chance to profit through at least one step of the transfer, the moving of the goods from rail to ship. The parties to the transaction are Canadian shippers, a Canadian railway and a British steamship line. What right has the U.S. to interfere in a case of this kind? Will the U.S. shipper have a better chance to ship goods on a White Star-Dominion vessel when she has been forced to sail from St. John than he has now when she is leaving Portland? If such cases as this one are to be the work of the Shipping Board, we need hardly look for any marked growth of the U.S. merchant marine resulting from the labors of that body."

Plant Line Service Cancelled.—A. W. Perry, General Manager, Plant Line, Boston, Mass., operating Canada Atlantic & Plant Steamship Co., has given notice that owing to conditions in the United States and Canada, on account of the war, the exceedingly high price and scarcity of fuel and of operating expenses, and the consequent falling off in passenger traffic, the company is unable to resume its service between Boston, Nova Scotia and Prince Edward Island. When the resumption of service is decided on notice will be given. All matters pertaining to the company's business will be attended to by F. H. Chipman, Plant Line, 453 Washington St., Boston.

Mainly About Marine People.

Rear Admiral W. C. Storey, Admiral superintendent, Esquimalt, B.C., has been promoted to Vice Admiral.

Artemas Lord, Superintendent of Lights at Charlottetown, P.E.I., under the Marine Department, died there, May 3, aged 81.

F. N. Sinclair has been appointed a pilot commissioner for the pilotage district of New Westminster, B.C., vice A. E. White resigned.

C. A. Lebel, chief clerk and acting agent, Marine Department, Montreal, is reported to have been appointed acting shipping master there, vice H. McLaughlin, resigned.

Vice Admiral C. E. Kingsmill, retired, who has been associated with the Canadian Naval Service Department for some years, has been promoted to Admiral on the retired list.

S. C. Calvin, formerly of the Calvin Co., Garden Island, Ont., has bought Bishop's Court, Kingston, Ont., which was the official residence of the former Anglican bishops of Ontario.

The Governor General in council has approved the action of the Vancouver Pilotage Commissioners in agreeing to pay their Secretary-Treasurer, C. Gardner Johnson, a salary of $900 a year.

John Miller, who, it is announced, has arrived in Port Arthur, Ont., to become Superintendent, Port Arthur Shipbuilding Co., has been in service with Vickers, Ltd., in England, Canadian Vickers, Ltd., Montreal, and latterly was with the Texas Steamship Co.

J. H. Welsford, President, Union Steamship Co. of British Columbia, and Chairman and Managing Director, J. H. Welsford & Co., Gulf Transport Co. and Leyland Shipping Co., Liverpool, Eng., died suddenly in London, Eng., May 1, aged 53.

William McGuiness, heretofore Secretary, Allan Line Steamship Co., and Manager, Allan Bros. & Co., Glasgow, Scotland, has been appointed to supervise Furness, Withy & Co.'s Liverpool, St. John's, Halifax services, with office in the Royal Liver Building, Liverpool, Eng.

W. E. Burke, Assistant Manager, Canada Steamship Lines, Ltd., has been accompanying the Toronto City Property Commissioner to some of the United States coal mining centres, to make arrangements for a supply of coal for civic institutions and for sale to citizens.

Capt. S. Sigurdson, who died at Winnipeg, May 17, from cerebral hemorrhage, aged 53, was born in Iceland, and came to Canada in 1876, settling in Manitoba. He was well known on Lake Winnipeg, where he commanded various steamships, latterly being captain and owner of the s.s. Mikado.

John V. Foy, whose appointment as General Passenger and Freight Agent, Canada Steamship Lines, Ltd., Toronto, was announced in our last issue, was born at Toronto, Aug. 27, 1882, and entered transportation service in 1901 with Capt. R. S. Melville, General Ticket Agent, Toronto. He was, from 1902 to 1904, clerk, Niagara Navigation Co., Toronto; 1905 to 1910, chief clerk to General Manager, Niagara Navigation Co., Toronto; 1911 to 1912, General Passenger Agent, Niagara Navigation Co., Toronto; 1913 to 1914 District Passenger Agent, Richelieu and Ontario Navigation Co., Toronto; 1914 to 1915 General Agent, Passenger Department, Canada Steamship Lines, Ltd., Chicago, Ill.; 1915 to 1916, General Agent, Passenger Department, same company, Buffalo, N.Y.; 1916, Assistant General Passenger Agent, same company, Toronto. He is a son of the late John Foy, who at the time of his death was President of the Niagara Navigation Co.

Dominion Government Vessels for Ocean Service.

Canadian Railway and Marine World for May gave some details of the sailing ship equipped with auxiliary motive pow ship equipped with auxiliary motive power, which the Dominion Government had ordered from the Wallace Shipyards, Ltd., North Vancouver, and stated that another similar vessel was to be ordered shortly.

A press report from South Vancouver, May 17, stated that at a meeting of the Board of Trade there on the previous day, it was definitely stated that the contract for the second vessel had been signed with Lamonde & Harrison, at an approximate price of $225,000, and that the vessel would be built on a site which the firm had acquired at the foot of Quebec St.

While it is quite probable that the second vessel which the Government decided to order some time ago, will be built by this firm, we were advised May 25, that the contract had not then been signed.

The vessel is to be of the following dimensions: length over all 255 ft., length of keel 225 ft., depth moulded 21 ft. 4 in., breadth extreme 44 ft., and the construction and eqlipment will follow generally the lines adopted by Canada West Coast Navigation Co., in those now being built for that company, on the Pacific coast, and illustration of which appeared in our last issue.

Ships Needed for U.S. Coast Defence.—The U.S. Navy Department has urged upon the consideration of the House Committee on Naval Affairs its urgent need for ships for the coast defence fleet and has suggested legislation to enable the department to commandeer those it requires at a reasonable price. A number of the finest yachts in the country have been tendered to the government by the owners for use during the war, either free or on a nominal lease, and numerous vessels of other types, including smaller boats, have been bought or leased; but a great many more are needed. The owners of a number of the vessels that are sought by the navy are asking exorbitant prices for them. About 200 yacht owners have refused to sell their vessels to the government at prices to be fixed by the Board of Appraisal, and several have refused to sell at any price.

Canadian Northern Steamships, Ltd., now owns six steamships, which were acquired from the Merchants Mutual Lake Line Ltd. last autumn, viz.: A. E. Ames, Beaverton, Mapleton, H. M. Pellatt, J. H. Plummer and Saskatoon. They are being operated under an agreement with the Canada Steamship Lines, of which H. W. Cowan is Operating Manager. The officers of the Canadian Northern Steamships, Ltd., are: Sir William Mackenzie, President; Sir Donald Mann, Vice President; D. B. Hanna, Second Vice President; L. W. Mitchell, Treasurer; R. P. Ormsby, Secretary; R. C. Vaughan, Assistant to Second Vice President and Assistant Secretary.

The Welland Ship Canal.

During the early part of the year, it was announced that work on the construction of the Welland Ship Canal was to be suspended until the conclusion of the war. Some minor work was gone on with preparatory to shutting down, and work definitely ceased May 2. Contracts are running for sections 1, 2, 3 and 5, the work, taken as whole, being rather more than 50% completed, that on sec. 3, the heaviest portion of the whole route, not being in so forward a state as on the other sections. It was anticipated that construction on the other three sections would have been completed this year, within the contract time, and that on sec. 3 about the middle of 1918, or a year behind the time specified in the contract. The contracts are held as follows: Sec. 1, Dominion Dredging Co., $3,487,727; Sec. 2, Baldry, Yerburgh & Hutchinson, Ltd., $5,377,185.75; Sec. 3, O'Brien & Doheny, $9,540,050; Sec. 5, Canadian Dredging Co., $1,945,788.

The services of the entire staffs have been dispensed with, including those of the Engineer in Charge, J. L. Weller, M.Can.Soc.C.E. Mr. Weller was born at Cobourg, Ont., Feb. 13, 1862, and entered Dominion Government service in 1883, as Assistant Engineer on the Trent Canal, and from 1885 to 1888 was Assistant Engineer on the Murray Canal; 1888 to 1900, Resident Engineer, St. Lawrence Canals, Cornwall, Ont.; 1900 to 1912, Superintending Engineer, Welland Canal, St. Catharines, Ont.

Proposed Government Control of Lake Freight Rates.

The House of Commons committee dealing with the revision of the Railway Act has before it an amendment to sec. 358, providing that the provisions of the act in respect of tolls, tariffs and joint tariffs, shall, so far as deemed applicable by the Board of Railway Commisisoners, extend and apply to all freight traffic carried by any carrier by water from any port or place in Canada to any other port or place in Canada. This amendment is being strongly opposed on behalf of the Dominion Marine Association. Francis King, M.A., Counsel for the Association, appeared before the committee, May 22, and stated that while the association had no objection to the railway lake carriers being under the board's control, the consensus of opinion was against the proposal. He claimed that there was no analogy between railways and lake lines, the latter having no public franchises and no exclusive privileges. On the water there was constant competition, which was not possible to the same extent on land. He also contended that the board could not possibly establish fair lake rates, owing to the rapidly changing conditions of the lake trade.

Payment of Freight Charges on Lake and Rail Grain Cargoes.—The railway companies have notified vessels that on delivery of grain cargoes for trans-shipment at Georgian Bay ports, they have discontinued advancing the payments for freight to the vessel. The Dominion Marine Association, acting for the vessel owners, immediately notified the shippers that in these cases the freight must be paid in advance. The Winnipeg Grain Exchange and the Lake Shippers Association of Fort William have since protested to the railway companies, and the matter is under consideration.

Atlantic and Pacific Ocean Marine.

The France-Canada Steamship Co., operating between Canada and France, is reported to have purchased seven sailing vessels from J. S. Winslow, Portland, Me.

The Donaldson Line s.s. Cassandra was the first trans-Atlantic steamship to arrive at Montreal this year, making port on May 2. Capt. R. C. Brown, the master, was presented with a gold headed cane by the harbor commissioners.

Canada Steamship Lines s.s. Cascapedia, which has been extensively repaired and overhauled, is running for a while on the Quebec Steamship Co.'s route between New York and Bermuda. Later in the season she will return to her customary service between Montreal, Gaspe and Prince Edward Island ports.

The British s.s. Lord Antrim, bound for Great Britain from the U.S., grounded near Fourchu, N.S., May 4, during heavy weather. She was floated during the same day and taken to Louisburg, where some temporary repairs were undertaken in order to allow of her proceeding to Halifax, where repairs were completed.

The Gulf Transport Co., operating between Great Britain and the Gulf of Mexico, of which J. H. Welsford & Co., Liverpool, are the managers, is reported to have sold its fleet of five vessels to Liverpool buyers, two of the vessels being sold to Elder, Dempster & Co. A sixth vessel belonging to the company has been held at Hamburg since the outbreak of war. J. H. Welsford & Co. control the Union Steamship Co. of British Columbia.

Furness, Withy & Co. announce that as Allan Bros. & Co. having reliquished the agency at Liverpool, Eng., for Furness Line vessels between Liverpool, Eng., St. John's, Nfld., and Halifax, N. S., all traffic arrangements are now conducted from Furness, Withy & Co.'s own offices in the Royal Liver Building, Liverpool. The services mentioned are under the supervision of W. McGuiness, heretofore Secretary, Allan Line Steamship Co., and Manager, Allan Bros. & Co., Glasgow, Scotland.

The Dominion Government s.s. Durley Chine was rammed and sunk off Sandy Hook, toward the end of April, by the outward bound s.s. Harlem. The captain and crew were saved and returned to New York. The s.s. Durley Chine was a single screw steamship, length 279 ft., beam 40 ft. 1 in., depth 18 ft. 4 in., and was built at Sunderland, Eng., in 1912. She was purchased by the Dominion Government in 1914 from the Alum Chine Steamship Co., London, Eng., chiefly for Hudson Bay service. The Dominion Government has taken action against the owners of the s.s. Harlem in the Halifax Admiralty Court, claiming $400,000 for the loss of the vessel.

The U. S. Government is reported to have purchased seven steamships from the Austro-American Steamship Co. These vessels have been interned in U. S. ports since the outbreak of war. The price paid for the vessels is given as $6,778,006.70, and the business was carried out by the U. S. Shipping Board. The vessels had previously been purchased from the Austro-American Co., and a contract had been entered into for their resale at $148 per deadweight ton, but on the request of the U. S. Government, the resale was not carried out, and the vessels were transferred to the government at the original price paid. The original contract confined the use of the vessels to neutral waters, but a release was arranged on payment of a further $20 a deadweight ton, and this release goes with the vessels to the government.

Maritime Provinces and Newfoundland.

The C.P.R. s.s. Empress was taken off her route between St. John, N.B., and Digby, N.S., May 21 to 23 inclusive, for a general overhaul at St. John.

The s.s. William Edwards, owned in Sydney, N.S., and chartered for carrying coal to Grand Falls, Nfld., foundered off Cape Pine, May 16, during a heavy gale. The crew were saved, and the vessel and cargo were fully insured.

The s.s. Aranmore, which has been running between Pictou, N.S., and Charlottetown, P.E.I., in conjunction with the car ferry Prince Edward Island, struck some submerged object while docking at Charlottetown, May 11, making a large hole in her side. Repairs were undertaken at Charlottetown after she was beached.

The s.s. Maskinonge, under charter to the Dominion Coal Co., which stranded off St. John harbor, at the end of April, was released May 5, practically without damage, and docked at no. 1 berth. The stranding was due to the dragging and fouling of the anchors during a freshet.

The Dominion Coal Co. is reported to have purchased the steamships Hochelaga and Lingan from Furness, Withy & Co. The Hochelaga was built in 1912, and is 4,681 tons gross, 2,601 net, and the Lingan was built in 1911, 4,677 tons gross, 2, 603 tons net. Both were built at Middlesbrough, Eng., and were specially designed for the coal trade.

The Governor General in council has approved bylaw 33 of the Pilot Commissioners of the Pilotage District of Sydney, N.S., providing that all licensed pilots and pilot apprentices shall undergo every year an examination as regards form vision and color ignorance, and that the sight tests shall be the same standard as those passed by candidates for masters and mates examinations.

Province of Quebec Marine.

The Inland Revenue Department received tenders, May 23, for the privilege of ferrying across the Ottawa River between Cumberland, Ont., and Buckingham, Que., for five years from May 1.

It was announced in the House of Commons recently that Capt. E. Angers, of the Dominion Government s.s. Vercheres, had been dismissed for incompetence. No investigation had been held, but one would be granted by the government if the person dismissed desired it.

The Montreal City Council has arranged with the Canada Steamship Lines to operate a ferry service to St. Helen's Island for $28,000 for the summer, the company to have the privilege of selling refreshments. The ferry is free to the public, the steamboats Longueuil and White Star being used, from May 23.

The Dominion Government s.s. Berthier arrived at Quebec, May 18, from Sorel, on her maiden trip. She was built at the Government shipyard at Sorel last year, being completed during the winter. She is intended for the use of the staff engineers of the St. Lawrence Ship Channel below Quebec. A description and illustration of her were given in Canadian Railway and Marine World for Dec., 1916.

The Quebec & Levis Ferry Co.'s annual meeting was held at Quebec, May 15, when a satisfactory report of the past year's business was presented. A vote of condolence was passed on the death of C. H. Shaw, President of the company. The board for the current year is: J. S. Thom, President; A. Gourdeau, Vice President; G. E. Allen Jones, L. C. Webster and W. J. Thompson.

The Minister of Trade and Commerce announced in the House of Commons recently that a contract had been entered into for a steamship service every two weeks between Quebec and Gaspe Basin, calling at way ports. Last year the service was every week, and was performed

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during April.

ATICLES			CANADIAN CANAL	U. S. CANAL	TOTAL
Flour	Eastbound	Barrels			
Wheat		Bushels			
Grain		Bushels			
Copper		Short tons			
Iron ore		Short tons			
Pig iron					
Lumber		M. ft. b.m.			
Stone		Short tons			
General merchandise		Short tons		4	4
Passengers		Number			
Flour	Westbound	Barrels			
Grain		Bushels			
Coal, hard		Short tons	7,500	82,792	90,292
Coal, soft			15,500	144,818	160,318
Iron ore		Short tons			
Manufactured iron		Short tons			
Salt		Barrels		6,000	6,000
Oil		Short tons			
Stone		Short tons			
General merchandise		Short tons	4,402	2,374	6,776
Passengers		Number			
SUMMAY					
Vessel passages		Number	36	130	166
Registered tonnage		Net	93,609	455,528	549,137
Freight—Eastbound		Short tons		4	4
—Westbound			27,402	230,884	258,286
Total freight			27,402	230,888	250,290

The Canadian canal opened April 25, and the U. S. canal April 24.

by the Gaspe and Baie des Chaleurs Steamship Co., Quebec, for a subsidy of $8,500.

In response to questions in the House of Commons recently, it was stated that the harbor master at Quebec, Capt. J. Murray, was, prior to his appointment, master of the C.P.R. s.s. Empress of Britain, and he was selected for the position by reason of the special qualifications he was known to possess, and was appointed at the time extensive works were authoried in connection with the new organization of the Harbor Commission. His salary is $3,500 a year, and that of his predecessor was $1,750.

Ontario and the Great Lakes.

The name of the steamship Harvey H., owned by Canadian Stewart Co., Toronto, has been changed to Henriette Stewart.

Canada Steamship Lines s.s. W. Grant Morden, which grounded near Sault Ste. Marie, May 18, was released, May 20, undamaged, and proceeded to Lake Erie.

The Northern Navigation Co. has placed in service at its freight sheds at Sarnia a number of electric storage battery trucks for handling freight to and from the sheds and vessels.

The s.s. Rochester, which is being operated by the Northern Navigation Co., this year, will be on the route between Cleveland, Ohio, and Sault Ste. Marie, calling at Sarnia and Georgian Bay ports.

The s.s. Forest City, which has been running between Port Arthur and Fort William and Silver Islet for several years, is reported to be for sale, and it is expected that she will leave that district.

The U. S. Lake Survey has issued a notice advising vessels to keep to the northerly side of the wrecked s.s. John Plankinton in the Canadian side of the channel in the Detroit River, opposite the foot of Fifth St., Detroit.

The tug Frances B. Hackett, owned by the Hackett Towing & Wrecking Co., Amherstburg, Ont., and Detroit, Mich., has been sold to E. P. Morse, Jr., Brooklyn, N.Y., who is believed to have made the purchase on behalf of the U.S. Government.

The A. B. Mackay Steamship Co.'s s.s. Natironco, which ran aground on Charity shoal, about 20 miles west of Kingston, May 16, was released on the following day, leaking somewhat, and proceeded west to be docked for examination and repairs.

The Pittsburg Steamship Co.'s s.s. Pentecost Mitchell and the s.s. Saxona owned by G. A. Tomlinson, Duluth, Minn., collided, bows on, near Watson's reef, Detour, Mich., May 13, and both sank. The crews took to the boats and reached shore safely. The vessels lie in the channel in a northeasterly direction, but there is sufficient room on either side for vessels to pass.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level for April, as follows: Superior, 602.28; Michigan and Huron 580.78; St. Clair 575.21; Erie 572.57; Ontario 246.24. Compared with the average April levels for the past ten years, Superior 0.72 ft. above; Michigan and Huron 0.63 ft. above; Erie 0.16 ft. above, and Ontario 0.14 ft. below.

The Great Lakes Transportation Co., Midland, Ont., has two steamships under construction by the Port Arthur Shipbuilding Co., Port Arthur, Ont. They are full canal size, 261 ft. long, 43½ ft. beam and 28 ft. 2 in. deep, 4,200 tons deadweight capacity. In addition to these, the company has on hand the construction of 5 canal size steamships, 3,500 tons deadweight capacity, and 6 smaller vessels.

The s.s. Keystorm, which was wrecked and sunk in Chippewa Bay, near Brockville, in 1913, is reported to have been sold by Lloyd's underwriters to James Richardson & Son, Kingston, for $7,500, as she lies. Some attempts have been made to raise her, but without success. It is now stated that arrangements are being made for her salvage, and that it is expected she will be raised during this summer. The wreck lies with her stern in about 110 ft. of water and her bows under about 35 ft. Owing to the present high price of vessels, due to shortage, it is considered a good proposition to spend a considerable sum on the work.

The steamships Congercoal and Lloyd S. Porter were destroyed by fire, May 10, while lying alongside each other at North Fairhaven, N.Y. Both vessels were engaged in the coal trade. The Congercoal was owner by the Conger Lehigh Coal Co., Toronto, and was built at Mount Clemens, Mich., in 1882, and named A. Weston. Her dimensions were, length 162 ft., breadth 31.3 ft., depth 13 ft.; tonnage, 276 gross, 333 register, and she was equipped with engine of 48 n.h.p. driving a screw. The Lloyd S. Porter was built at Port Huron, Mich., in 1893. Her dimensions were, length 158.7 ft., breadth 29.5 ft., depth 10 ft.; tonnage, 489 gross, 397 register, and she was equipped with engine of 43 n.h.p. driving a screw.

The U.S. Lighthouse Bureau has marked with two red spars, carrying red lights at night, the channel bank of Pipe Island, opposite and above the wrecks of the steamships Pentecost Mitchell and Saxona, in the St. Marys River. The stacks and spars of the wrecks are visible above water, and are marked at night by lights maintained by the owners. The available channel between the wrecks and Pipe Island Bank has a clear width of 500 ft. of which about 400 ft. is on the easterly side and 100 ft. on the westerly side of the chart vessel course. Vessels are warned not to meet or pass each other in the immediate vicinity of the wrecks. The tug Minta K. has been placed to oversee the passage of vessels in accordance with the rules and masters are requested to co-operate in keeping the channel clear.

Masters and Mates Certificates and Returned Soldiers.—The Governor General in council has amended the scale of fees as previously adopted to provide that in the case of a returned soldier from active service at the front, or in the case of a soldier who has been honorably discharged and returned as medically unfit for service at the front, proof of which shall lie with the candidate, the fee for a master's or a mate's certificate of any grade shall be $1.

Levis Dry Dock.—Work on the construction of the graving dock at Lauzon, Levis, Que., is reported to be progressing satisfactorily. It is stated that the excavation will be completed this year, with most of the concreting. When completed, this dock will be of the following dimensions: Length, clear, 1,150 ft.; width, 120 ft.; maximum depth, 45 ft., making it the largest dry dock in the world. It will be 10 ft. deeper than the next largest at Boston, Mass., and 130 ft. longer than the Gladstone Dock at Liverpool, Eng., which, however, is 1 ft. deeper.

Manitoba, Saskatchewan and Alberta.

The Ross Navigation Co. is building a stern wheel vessel at Pas, Man., and it is expected that it will be ready for operation early in the summer.

The s.s. Keenora, at one time owned by the Rainy River Navigation Co., Fort William, Ont., and latterly by the Rat Portage Lumber Co., Kenora, Ont., and, as announced in our March issue, sold to Alex. Mackenzie, Winnipeg, has been thoroughly overhauled and lengthened 50 ft. She is being operated in excursion traffic on the Red River. She was built at Kenora, Ont., in 1897, and is scre wdriven by engine of 38 n.h.p. When she was last sold she was dismantled at Kenora and reassembled at Winnipeg.

British Columbia and Pacific Coast.

Navigation on the Yukon River opened May 15, being the latest since 1899, when it did not open until May 17.

A general meeting of the Alberni Canal Transportation Co., Ltd., was held at Victoria, May 12, to receive and dispose of the liquidator's report covering the winding up of the company's affairs.

The Hudson Bay Co. is operating a gasoline motor boat, this year, on the Stikine River, between Telegraph Creek, B.C., and Wrangell, Alaska. The service commenced May 10, the fare being $10 each way, meals 50c each.

The Grand Trunk Pacific Coast Steamship Co. is allowing passengers on its steamships to occupy parlor rooms on board, while the vessels remain in port at Skagway, Alaska, for a charge of $4 a room with bath, for one or two persons, and $3 without bath.

The s.s. Quadra, formerly owned by the Dominion Government, and operated as a lighthouse and buoy tender on the British Columbia coast, and which was sold recently, after being sunk in collision, to a mining company at Howe Sound, is having oil burning apparatus installed at Vancouver.

The Grand Trunk Pacific Coast Steamship Co. will commence its summer Alaska service June 11, with the sailing of the s.s. Prince George from Seattle, Wash., calling at Vancouver, Prince Rupert, Ketchikan, Wrangell, Juneau and Skagway. The service will be given weekly to Aug. 27, by the steamships Prince George and Prince Rupert.

The New England Fish Co. has put into service the s.s. Canada, which it purchased from the British Columbia Fisheries, Ltd., when that company was wound up about two years ago. The vessel has been thoroughly overhauled and remodelled. The s.s. Imbricaria, purchased at the same time. is now being overhauled, and is expected to be ready for service towards the end of June.

The C.P.R. has purchased the car barge D. L. Co. XXIV, with triple tracks, capable of handling nine cars, from the Drummond Lighterage Co., Seattle, Wash. The barge is 140 ft. long, with 42 ft. beam, and has been used by the Chicago, Milwaukee & Puget Sound Ry. for transportation on Puget Sound. The barge has been transferred to the Canadian register and renamed Transfer No. 6.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Rupert, which stranded on the west coast of Genn

Island, Mar. 22, was refloated at the end of April, and proceeded under her own steam, convoyed by the salvage steamer Salvor, to Victoria, where she was docked for examination. It is stated that about 42 new plates will be required, and that a number of plates will have to be removed and faired. The repairs will, it is estimated, take about two months.

The Western Fuel Co., Victoria, has obtained an injunction against Wilhelm Wilhelmsen, restraining him from interfering with the loading of the s.s. Tancred, under charter to the plaintiff company in the coal trade between Nanaimo, B.C., and San Francisco, Cal. The charter is dated June 5, 1915, and the master of the vessel stated that he had received instructions to refuse to load the vessel, and to withdraw her from service, unless the company agreed to pay £8,000 a month and to insure the vessel for £200,000.

The British Columbia Salvage Co. has entered suit in the U. S. District Court at Seattle, Wash., against the owners of the s.s. Congress for $314,200, based on 30% of the salved value of the vessel, for services rendered by the tug Salvor, when the Congress was burnt at Coos Bay, Ore., in Sept., 1916. The vessel was owned by the Pacific Coast Steamship Co., which amalgamated with the Pacific Alaska Navigation Co. The Congress was not taken over by the amalgamated company, but was abandoned to the underwriters, who have since paid for her as a total constructive loss, and she has since been sold to other parties, for, it is said, $1,000,000.

It is reported that the Grand Trunk Pacific Alaska Co. has been incorporated at Olympia, Wash., to own and operate the power schooner Tillamook, which we announced recently had been purchased by the Grand Trunk Pacific Coast Steamship Co., for operation to Ketchikan, Alaska, from Prince Rupert, B.C. It is said that the company will acquire other similar vessels for the cannery trade. The incorporators named are: J. S. Gibbon, Vice President, Grand Trunk Pacific Dock Co., Seattle, Wash.; J. H. Burgis, General Agent, Passenger Department, G.T. P.C.S. Co., Seattle; F. L. Norman, Commercial Agent, same company, Seattle; C. E. Crosen and K. F. Hass.

As the result of an enquiry into the purchase of the launch Faloma by the B.C. Government in 1911, on account of the vessel not now being in use, a standing committee of the legislature has reported that the Faloma was purchased from the Pacific Marine Brokerage Co. for $10,000. She was built in 1910 for that company, at an apparent cost of $8,000. She has been operated satisfactorily by the government for about two years, since when her engines have not been powerful enough to run her economically, and she has been laid up. The committee reported that the transaction was an ordinary business deal, that in view of the demand for boats at the time, the owner did not make any excessive profit, and that there is no evidence of commission or campaign fund payments.

Handling of Vessels in Harbors.—The Marine Department has issued special notice, no. 34, to masters, shipowners and others concerned, giving extracts from the Defence of Canada Order, 1917, relative to the handling, mooring and navigating of vessels in Canadian harbors and the vicinity, showing penalties incurred for contraventions. Copies may be had from the department.

Coast, Lake and River Steamship Officers for 1917.

The following are additional returns received since those published in our April and May issues. The first column shows the names of vessels, the second those of captains, and the third those of chief engineers:

BRITISH YUKON NAVIGATION CO., WHITE HORSE, YUKON

Canadian	J. P. Douglas	J. P. Bourne
Casca	J. O. Williams	R. C. Haws
Dawson	C. J. Bloomquist	J. R. Young
Scotia	J. McDonald	D. Sullivan
Selkirk	G. H. McMaster	W. C. Vey
Tutshi	J. G. Roberts	Jas. Lauderdale
White Horse	W. Turnbull	P. Larssen

CANADA STEAMSHIP LINES, LTD., MONTREAL

Aberdeen	E. Legault	.....
America	R. H. Carnegie	.....
Belleville	W. Bloomfield	John Kennedy
Bickerdike	T. H. Johnston	D. S. LaRue
Boucherville	A. Laviolette	C. Hamel
Cadillac	W. Beatty	Jas. Kettles
Calgarian	R. Pyette	A. L. Black
Cayuga	C. J. Smith	.....
Chippewa	W. Malcolm	.....
City of Hamilton	O. Patenaude	W. Dungan
City of Ottawa	J. L. Baxter	C. E. Holmes
Corona	B. A. Bongard	Jos. Kennedy
Doric	H. J. Aitken	Jos. Aston
E. B. Osler	C. E. Robinson	W. Robertson
Emperor	J. F. Davis	G. M. Smith
Fairfax	M. Heffernan	C. LaVallee
Haddington	E. J. Shannon	C. Leriche
Hamiltonian	N. McKay	E. A. Kennedy
Home Rule	R. D. Simpson	.....
Ionic	O. Wing	A. E. Crosthwaite
Iroquois	J. H. Hudson	J. E. Readman
J. H. G. Hagarty	G. W. Pearson	C. Robertson
J. R. Binning	G. Irwin	.....
Kingston	E. Booth	W. Chipman
Longueuil	.....	H. Noel
Louis Phillippe	H. Mandeville	A. Chayur
Macassa	J. Henderson	E. A. Prince
Magnolia	.....	T. Hazlett
Martian	A. B. McIntyre	R. Foote
Midland King	P. McKay	Jas. McGregor
Midland Prince	A. E. Stinson	J. A. Pickard
Modjeska	.....	A. McLaren
Montreal	F. X. LaFrance	N. Beaudoin
Pierrepont	J. E. Ouellette	.....
Quebec	J. Rinfret	J. Matte
Ramona	E. M. Charlebois	.....
Rapids King	.....	W. Hazlett
Rapids Prince	.....	G. Hazlett
Rapids Queen	.....	A. Charbonneau
St. Irenee	.....	O. Bonin
St. Lawrence	John Bertrand	B. Farrell
Saguenay	J. Simard	A. Godin
Sarnian	R. McIntyre	I. J. Boyton
Seguin	H. McLennan	J. B. McLaren
Stadacona	H. Hinslea	J. Grant
Sir Trevor Dawson	G. H. Page	W. W. Norcross
Syracuse	L. Legendre	.....
Tadousac	W. Gagne	G. Gagnon
Thousand Islander	C. H. Kendall	.....
Three Rivers	A. Mondor	.....
Toronto	J. J. Jarrell	D. J. Leslie
Turbinia	.....	J. Gilbert
W. D. Matthews	D. W. Burke	W. Reid
W. Grant Morden	N. Campbell	R. Chalmers
W. M. Egan	N. Hudgins	J. A. Connor
Wyoming	T. B. Greenway	.....

CANADIAN NORTHERN STEAMSHIPS LTD. (Operated by Canada Steamship Lines Ltd.)

A. E. Ames	W. H. Montgomery	G. Jarrell
Beaverton	W. Brian	H. Myler
H. M. Pellatt	O. W. Patterson	W. Byers
J. H. Plummer	H. A. Leaney	F. A. McCauley
Mapleton	A. F. McLennan	A. E. House
Saskatoon	R. J. Wilson	J. A. McDonald

PROGSESSIVE STEAMBOAT CO., VANCOUVER, B.C.

Maagen	H. Furastad	J. Harte
Progressive	A. Lewis	G. Dixon
Pronative	J. P. Tait	O. Sherberg
Projective	A. O. Clampitt	O. A. Mathieson
Senator	H. Graner	B. Bond

REID NEWFOUNDLAND CO., ST. JOHN'S, NFD.

Argyle	W. Norman	G. Pike
Clyde	J. Knee	J. Pollock
Dundee	D. Blandford	J. Cunningham
Ethie	J. Goobie	P. Burton
Glencoe	A. Blandford	F. Barnes
Home	H. Harbin	J. Pike
Kyle	L. Stevenson	J. McFailane
Meigle	W. Parsons	J. McFailane
Sagona	G. Spracklin	J. Buckingham

The Arctic Steamship Co., Ltd., has had its authorized capital stock increased from $20,000 to $80,000.

The Permissible Draught for the Welland Canal has been fixed for the present at not exceeding 14 ft.

Stranding of the s. s. Prince Rupert.

As a result of an official investigation at Victoria, B.C., into the causes which led to the stranding of the Grand Trunk Pacific Coast Co.'s s.s. Prince Rupert, on Genn Island, Mar. 23, it was found that a violent and blinding snowstorm temporarily obscured all the leading marks, and the unusually high tides caused an indrift toward the mouth of the Skeena River. The master, Capt. Mackenzie, was perfectly justified in retiring to his cabin on the night of the casualty, after leaving instructions to be called if necessary, as the weather was then clear and all marks visible. The storm arose very suddenly, and the engines were put at slow speed, and later full speed astern, but before way could be got off the vessel, she struck on a reef at the north end of Genn Island, on the top of high water, at a tide which was one of the highest of the year. The court considered that under the circumstances everything possible was done to avoid the disaster, although no soundings were taken, the vessel being fully equipped in this respect, but the court considered that the taking of soundings would have been of no use. The master and officers were therefore exonerated from all blame for the casualty and their certificates were returned to them.

The Atlas Transportation Co., Ltd., has been incorporated under the Quebec Companies Act, with $20,000 capital, and office at Montreal, to own and operate vessels of all kinds, with or without motive power, and to carry on a general transportation business. The incorporators are: J. G. Rene, L. Gelinas, J. H. Bourque, Maisonneuve, Que., and H. Bourassa and O. Perrault, Montreal. The company has not been fully organized as yet, but the President is A. A. Larocque, and the Managing Director is Yvon Dupre, both of whom are directors of Sincennes-McNaughton Line, Ltd., of which the new incorporation is a subsidiary. Among vessels which the new company is reported to be taking over, are the barge Russell Sage, and the steamboat William L. Proctor, owned by Sincennes-McNaughton Line, Ltd., and which have recently had their names changed to Atlasco and Conqueror, respectively.

The Atlas Transportation Co., Ltd., The Barge Twin Sisters Co., Ltd., The Barge Ireland Co., Ltd., and The Barge Menominee Co., Ltd. incorporated recently under the Quebec Companies Act each with $20,000 capital and office at 75 Common St. Montreal are closely associated with Sincennes-McNaughton Line, Ltd., Montreal and the Touzin Sand Co. The President is A. A. Larocque and the Managing Director is Yvon Dupre, in each case, both of whom are directors of the two latter companies. They own a number of forwarding barges and plan to make further purchases for operation on the Great Lakes.

Notice to Atlantic Navigators.—All vessels sailing from a port on the St. Lawrence River of Gulf, below, but not including, Quebec, must call at Sydney, N.S., for instructions from the senior naval officer there as to the route they must follow, unless they have been given precise instructions for the whole of their route before sailing. This notice has been issued under the Defence of Canada Order, penalty for non-compliance with which is a fine not exceeding $5,000, or imprisonment not exceeding 5 years, or both fine and imprisonment.

Chartered Vessels and War Region Risks.

The appeal of the Maskinonge Steamship Co. against a judgment in favor of the Dominion Coal Co., as charterer of the s.s. Maskinonge, in respect of insuring the vessel against war risks, was before the English Court of Appeal recently. The s.s. Maskinonge was originally chartered by the Dominion Coal Co. in 1909, for seven seasons, and in 1915 another agreement was entered into for a further six years. In this latter agreement, it was provided that should the vessel be ordered by the charterer into the war region, the war risk insurance premium payable by the owner should be refunded by the charterer. In Oct., 1916, the vessel was ordered by the charterer to go to Boston, Mass., and on or about Oct. 8, a German submarine appeared off Nantucket and sank about six vessels. From this, the appellant claims that that part of the U.S. coast became a part of the war region, and the vessel was insured against war risks. The matter really resolved itself into the definition of the term war region in the agreement, and the appellant contended that as soon as it became clear that the region in which the vessel was trading was one in which there was real apprehension of enemy activity, that district became a war region. The war risk insurance for three months was £1,750.

The judgment was that the appeal be allowed, and the decision of the lower court reversed, the appellant's claim being allowed in full with full costs in the appeal and in the lower court. The judge held that when, as in this case, there had actually been warlike operations by the appearance of a German submarine and the sinking of vessels in the area in which this vessel was trading or ordered to trade in the future, and that there was reasonable apprehension that these operations would recur, and no reasonable grounds for coming to the conclusion that this was a mere sporadic attack, then that constituted this area a war region within the meaning of the contract.

Requisitioning Ships for Government Purposes.

A Dominion order in council was passed on April 24, repealing orders passed Nov. 24, 1916, and Mar. 31, 1917, and providing as follows: Whereas by order in council of Nov. 24, 1916, certain regulations were enacted under the provisions of the War Measures Act, 1914, for the requisitioning of any British ship registered in Canada by and on behalf of His Majesty for the carriage of foodstuffs and of any other articles of commerce; and whereas by order in council of Mar. 31, 1917, further regulations were made and enacted under the provisions of the said act for the requisitioning, for the said purpose, of any ship under construction or about to be constructed in any shipyard in Canada for neutral owners; and whereas it has been represented that it is essential that provision be made for the requisitioning of any British ship registered in Canada, for any other purpose whatsoever, including the requisitioning of any cargo space therein, and also for the requisitioning of any ship under construction or for the construction of which a contract has been entered into, in any shipyard in Canada, whether for British or for foreign ownership; therefore the Governor-General in council, under and in virtue of the provisions of the War Measures Act, 1914, orders as follows:

Any British ship registered in Canada may until further order be requisitioned by and on behalf of His Majesty for the carriage of foodstuffs and of any other articles of commerce, or for any other purpose whatsoever. Any cargo space in any British ship registered in Canada may until further order be requisitioned in whole or in part by and on behalf of His Majesty for any purpose whatsoever. Any ship under construction or for the construction of which a contract has been or may be entered into in any shipyard in Canada, even in cases where the export thereof for foreign registry has been authorized by the Governor in council, may until further order be requisitioned by and on behalf of His Majesty for the carriage of foodstuffs or for other articles of commerce or for any other purpose whatsoever. The Minister of Marine and Fisheries is authorized and directed to give effect to these regulations by causing notice of requisition to be served on the owner of any such ship, or the builder in the case of a ship under construction, or for the construction of which a contract has or may be entered into.

We were officially advised on May 16 that no requisitions had been passed under the provisions of the order in council quoted above. As stated in previous issues of Canadian Railway and Marine World, the Dominion Government, between Sept. 19 and Nov. 15, 1916, authorized the exportation to Norway on completion of 18 cargo steamships to be built at New Glasgow, N.S., Montreal, Toronto, Port Arthur, Ont., and Vancouver, B.C., and for the exportation to the United States of two others to be built at Toronto. On May 16 we were officially advised that the only companies that had actual contracts for the construction of vessels for neutral owners were: Canadian Vickers, Ltd., Montreal, 2; Polson Iron Works, Toronto, 2; Thor Iron works, Toronto, 2. There appears to be little doubt that these will be taken over for the British Government.

Proposed Shipbuilding in New Brunswick.

The question as to what steps the New Brunswick Government should take in promoting and encouraging shipbuilding within the province was discussed at an impromptu meeting at Fredericton, N.B., led by T. H. Estabrooks. The scheme of aiding the construction and operation of vessels, as being carried out by the British Columbia Government, and also the proposals suggested under the Nova Scotia scheme, were outlined and discussed, and the history of shipbuilding in New Brunswick was reviewed. In the main, it was suggested that the N.B. Government should appoint a commission of business men, some of whom should have some knowledge of the shipbuilding business, with authority to proceed as speedily as possible with the construction of vessels of a suitable type to meet immediate needs. The commission should be provided with a fund of $1,000,000 for the proper carrying on of the work and for assisting such construction as deemed advisable. The type of vessel to be adopted, method of propulsion, etc., should be left for decision by experts. It was suggested that instead of setting aside the sum suggested to promote the business, the Government should pay a bonus on a tonnage basis. A resolution calling upon the government to take such steps as would eventually lead to the re-establishment of the shipbuilding industry in the province was passed and sent to the government, and T. H. Estabrooks and J. A. Likely were appointed to select a representative committee to meet members of the government to discuss the proposals.

Repairing the Damaged German Ships Interned in the U. S.

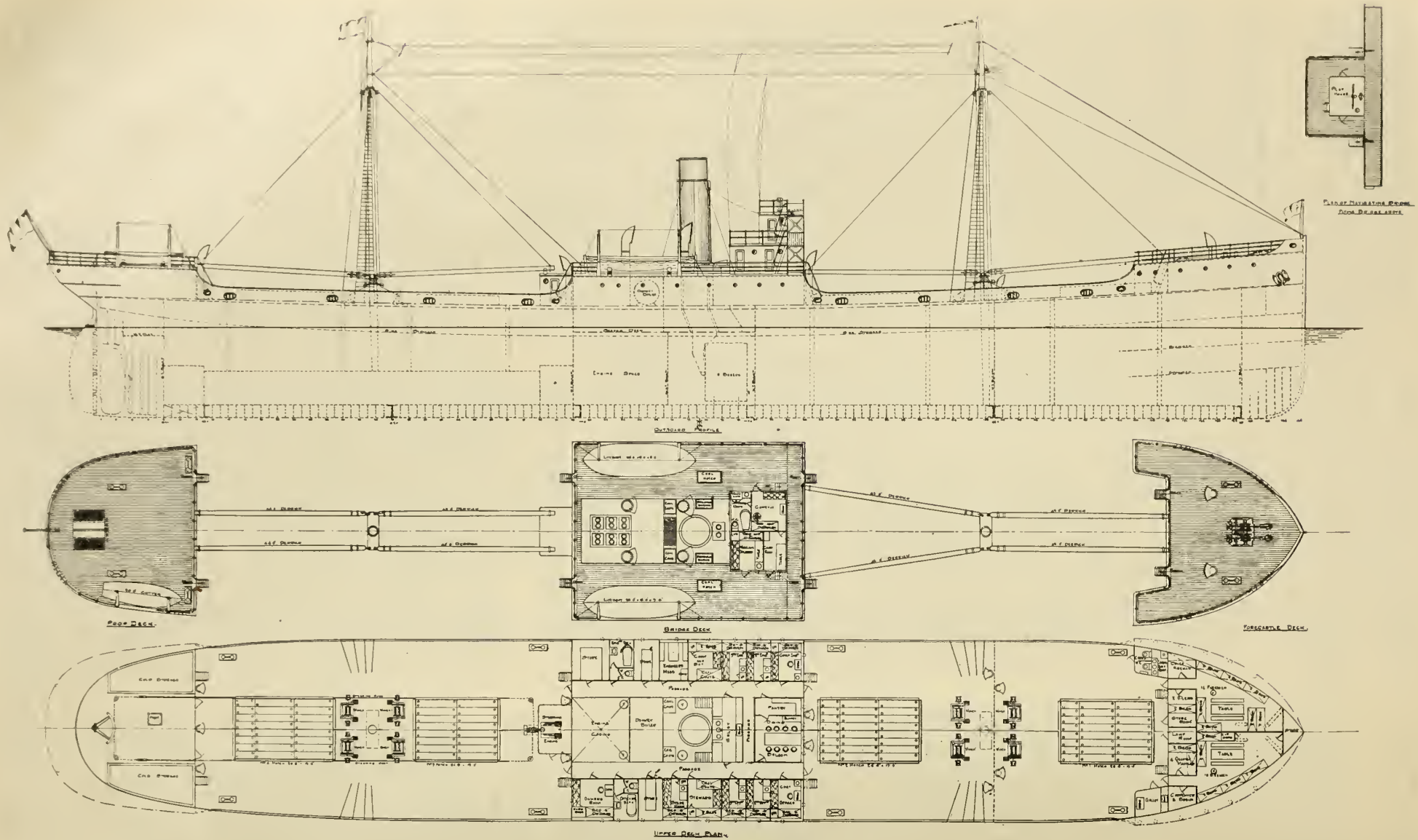
Chairman Denman of the United States Shipping Board has announced that a detailed survey of each of the 71 German and Austrian ships interned in the U. S. has been made, disclosing the damage done each; that draughtsmen have prepared drawings from which the impaired or destroyed parts of the machinery can be fashioned; and that the necessary repair work is being rushed under the supervision of a corps of marine architects in private shipping yards. Mr. Denman said: "Immediately after the removal of the crews from the interned vessels the Shipping Board undertook to repair them. It organized a committee of experts, including F. S. Martin, of New York, and S. Taylor, Chairman of the American Bureau of Shipping. The committee directed a survey of each ship. It was found that many important parts of the machinery had been destroyed or thrown overboard—parts that connected the power with the propelling mechanism. Draughtsmen were engaged to draw designs for the missing machinery, and repairs are being made in U. S. factories. Many of the interned ships were constructed in British yards. The British authorities are furnishing us with the original plans. Within five months the most seriously damaged of the ships will be ready to put to sea. The smaller ships will be prepared for commission in a much shorter time."

The Shipping Board's survey of ships interned in U.S. ports has disclosed that the three great steamships of the Hamburg-American Line, the President Lincoln, the President Grant, and the Pennsylvania, are the most extensively damaged of the German vessels. The repairs on each of these ships will approximate $250,000.

Rideau Steamboat Co., Ltd. has been incorporated under the Dominion Companies Act, with $50,000 capital and office at Ottawa, Ont., to own and operate steam and other vessels, and to carry on a general transportation and vessel owning and chartering business. The provisional directors are: F. F. Pardee, A. S. Burnham, N. St. C. Gurd, W. J. Barber, F. W. McKinnon and Andrew Haydon, Ottawa, Ont.

Landbo Transportation Co., Ltd., has been incorporated under the Ontario Companies Act, with $40,000 capital and office at Sarnia, to own and operate steam and other vessels for the conveyance of passengers and merchandise, and to carry on the general business of common carrier. The incorporators are: W. E. Beaton, W. J. Best, A. W. Campsall, and F. R. Reeves, Sarnia, Ont.

Increased Pilotage Tariff at Montreal.—An order in council has been passed increasing the pilotage tariff at Montreal, on coasting and sea going steamships by 25c a foot draught, making the new tariff $2.75 for each foot of draught for any coasting steam vessel, and $3.25 for each ocean going steam vessel. The tariff for piloting inland vessels remains as heretofore, $2.50 per foot draught.



Profile and Plan Views, Steamship War Dog.

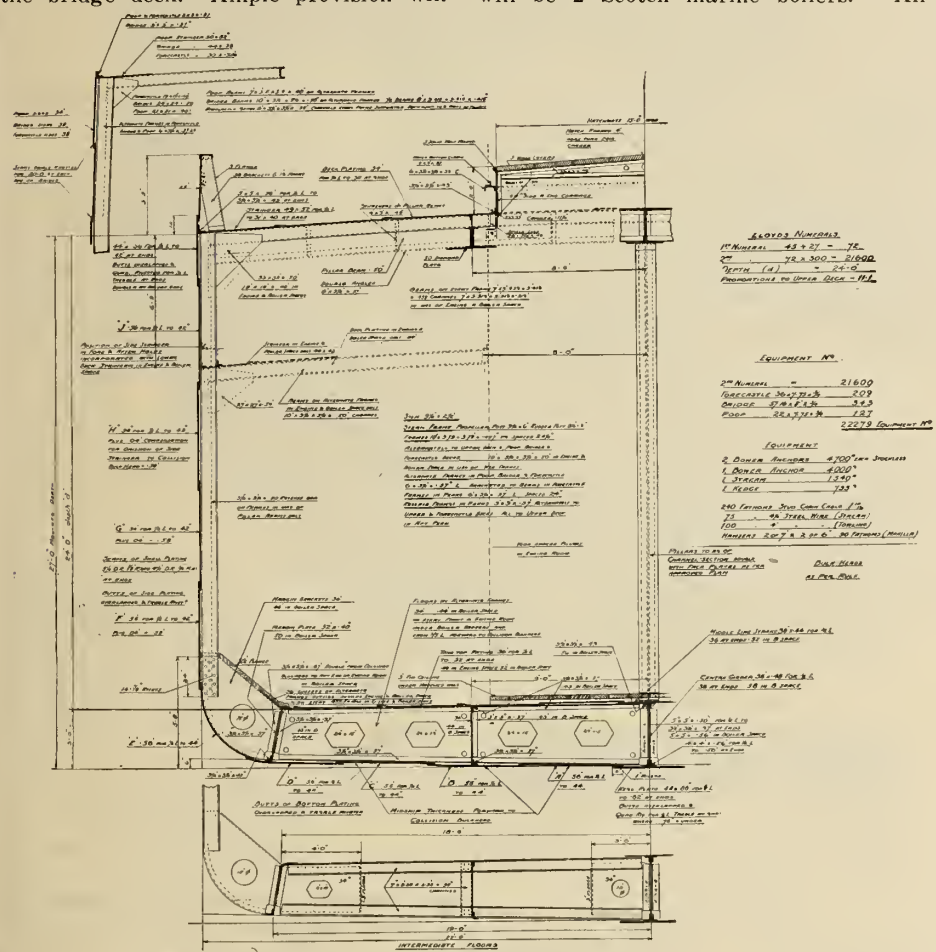
Steel Cargo Steamship Construction at North Vancouver.

A single screw cargo steamship was launched from the Wallace Shipyards, North Vancouver, B.C., May 17, and it is stated that this is the first steel steamship ever to be launched in British Columbia waters. The christening ceremony was attended by a number of prominent men in the locality, and the vessel was named War Dog.

The order for this vessel was originally placed with the builders by the Kishimoto Kissen Kabuskiks Kaisha, of Japan, but while on the stocks, was transferred to J. W. Chambers, Liverpool, Eng., who we have good reasons for stating is acting for the British Government. Following are the principal dimensions: Length overall, 312 ft. 10½ in.; length, b.p., 300 ft.; beam moulded, 45 ft.; depth moulded, 27 ft.; load draught, 22 ft. 6¾ in.; load deadweight, 4,750 tons; displacement, 6,750 tons; total capacity of holds, 214,700 cu. ft. The general arrangement of the ves-

sel, which is being built to Lloyd's 100 A1 class, is illustrated by the elevation and deck plans given herewith. The scantlings are shown upon the midship section. The vessel is of the single deck type, with poop, bridge and top gallant forecastle. The vessel will be divided transversely by five watertight bulkheads, the position of which is shown in the accompanying illustrations.

A short second deck will extend between the engine room and boiler room bulkheads, the 'tween deck space being utilized for coal, in addition to the permanent side bunkers, giving a total coal capacity of 327 tons. The forecastle deck will be about 34 ft. long, the bridge deck about 58 ft., and the poop deck about 35 ft.. The officers' quarters, owners' stateroom and spare room will be on the bridge deck. Ample provision will



Construction Details, Steamship War Dog.

be made for bathrooms, lavatories, etc. The galley, pantry, officers' dining saloon, engineers' messroom and stores will also be on this deck. The officers' accommodation will be wood lined and finished in white enamel, and the owners' and captain's rooms in polished hardwood. At the forward end of the bridge deck will be a steel house, consisting of captain's cabin and bathroom, chart room and wireless room; above will be the pilot house, which will also be of steel construction, with a navigating bridge and flying bridge over. The accommodation throughout will be heated and ventilated and installed with electric lighting. The crew's quarters will be in the forecastle, which will have separate galley, wash room, shower bath, lavatories, etc.

There will be 3 main cargo holds and 4 hatches, no. 1 hatch being 22½ ft. long, no. 2 hatch 24½ ft., no. 3 hatch 20 ft. 5 in., and no. 4, 24½ ft., the width in each case being 15 ft. Each hatch will be served by two 5 ton derricks, stepped on tables on the fore and mainmasts. The derricks will be operated by 8 separate steam winches, each being capable of handling 5 tons. The double bottom will be used for water ballast, feedwater being carried in no. 3 tank, beneath the engine and boiler rooms. The sanitary and fresh water system is receiving special attention, and the supplies will be ample for all occasions.

The propelling machinery, which will be located amidships, will consist of one set of triple expansion engines having cylinders 24 x 38 x 62 in. x 42 in., and which will be constructed in the builders' own shops. They will have cast iron back and front columns and be of substantial construction and design. There will be 2 Scotch marine boilers. All pumps will be independent, the condenser being of the centre flow type. The installation will include evaporator, feedheater, filter, etc.

On the upper deck and in the space between the engine and boiler casings will be a donkey boiler, of 10 h.p. capacity, for supplying steam to the cargo winches when in port, access to the donkey boiler being direct from the boiler room, and also by a door leading to the passage alongside the casing on port side. Directly abaft the engine room, on the upper deck, will be a steel house, containing the steam steering gear, 7½ x 9 in. double cylinder horizontal type, the leads being carried along the upper deck direct to the quadrant in the poop. Hand steering will also be provided for on the poop deck.

The life saving requirements will be according to government requirements. Two lifeboats, 28 x 8 ft., will be carried on the bridge deck, and a 20 ft. cutter (work boat) on the poop deck. The vessel will be well equipped with fire extinguishing apparatus.

The vessel when complete should easily attain the guaranteed speed of 9½ knots.

Enemy Aliens Barred from U.S. Marine Service.—The Supervising Inspector General of the United States Steamboat Inspection Service has sent the following circular letter to supervising and local inspectors of the 1st, 2nd, 3rd, 5th, 8th, 9th and 10th districts, except the local districts of Albany, N.Y., and Burlington, Vt., Steamboat Inspection Service: "You are informed that, under instructions of the President, given to the Secretary of Commerce, you will not issue, until further advised, certificates of service as able seamen to persons who are enemy aliens."

The Panama Canal.—The terminal ports at Cristobel and Balboa are now closed between sunset and sunrise. All navigational lights are extinguished and it is therefore necessary for vessels to arrive off these ports by daylight. On account of lights being out and buoys removed, it will be unsafe for vessels to approach, either by day or night, nearer than two miles from the harbor entrances, without canal pilots.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Canuck Supply Co., Ltd., railway materials and supplies, Montreal. F. W. Moore has been appointed Vice President.

Taylor & Arnold Limited, Montreal, have been appointed sole Canadian agents for Chadburn's (Ship) Telegraph Co., Ltd., Liverpool, Eng.

M. Beatty & Sons, Ltd., dredge, hoisting engine, derrick and clamshell bucket manufacturers, of Welland, Ont., have leased their shipyard and present boiler shop to the Welland Shipbuilding Co., Ltd., the incorporation of which is referred to elsewhere in this issue. M. Beatty & Sons have not leased all of their plant, as daily press reports would indicate, but are carrying on business as usual.

Preston Car & Coach Co., Ltd.—Some months ago, Martin N. Todd, who had been President for a number of years, resigned, and was succeeded by Frederick Clare. Donald M. Campbell, General Manager, has resigned recently, and no successor has been appointed, his duties for the present being divided among the other officials, who, in addition to the President above mentioned, and F. D. Palmer, Vice President, include A. N. W. Clare, Managing Director; W. J. Hodgins, Secretary-Treasurer, and C. S. Wright, General Sales Manager.

Independent Pneumatic Tool Co., Chicago. John D. Hurley, who has been Vice President of the company since its organization, and has been identified with the industry since pneumatic tools were first placed on the market, has been elected President to succeed the late J. B.

Brady. Ralph S. Cooper, who has been Manager of the New York office for 12 years, has been elected Vice President, and Robert T. Scott, Manager of the Company's Pittsburg branch, has been elected a director and member of the executive committee.

Electric Service Supplies Co., Philadelphia, has issued a 64 page catalogue of golden glow railway headlights and projectors, including also a complete line of switches and other headlight accessories necessary for use in connection with railway headlights. The book is printed in two colors, and considerable effort has been expended in reproducing different headlights as they really are. It was found particularly difficult to illustrate with ink, the golden glow reflector, which is of a greenish yellow color. Copies of the catalogue may be had on request to the Electric Service Supplies Co., Philadelphia, or the agents for Canada, Lyman Tube & Supply Co., Ltd., 323 St. James St., Montreal, and 33 Melinda Street, Toronto.

Robert W. Hunt & Co., engineers, bureau of inspection, tests and consultation, Chicago, with which Robert W. Hunt & Co., Ltd., Montreal, is affiliated, has offered the United States Secretary of War the services of its organization on terms that will mean their being rendered at actual cost. The company's organization embraces about 700 people, consisting of experienced civil, mechanical, metallurgical, chemical and mining engineers, supported by a corps of subordinates, most of whom are also men of technical and practical education, and the others selected on account of their practical experience in the several lines of duty to which they are assigned. The company's monthly pay roll is about $100,000. In the letter making the offer, Robert W. Hunt & Co. say: "In regard to our work for the Canadian Pacific Ry., we can refer you to Lord Shaughnessy, President of that company, who has been and is, as you know, so closely identified with the Canadian purchases of the allied powers. We have been and are now performing inspection work on orders for the British, Russia, Italian, Netherlands and French Governments. These services cover not only munitions, but also railway and other equipment and steel rails and their accessories."

General Railway Signal Co. of Canada, Ltd.—C. O. Poor, formerly Assistant Resident Manager of the Chicago District, and later in charge of the munition plant of the General Railway Signal Co. of Rochester, N.Y., has been appointed President and General Manager of the General Railway Signal Co. of Canada, Ltd., Lachine, Que. After finishing a high school course in Port Chester, N.Y., he was employed for two years in the freight office of the N.Y.N.H. & H.Rd. at Greenwich, Conn. In 1892, he was a clerk in the Hall Signal Co.'s construction department at Chicago, and afterwards served as Superintendent of that company's works at Garwood, N.J., from 1896 to 1905, but spent the summer of 1904 in Europe studying the French, Belgian and English signalling systems. From 1905 to 1912 he was Superintendent of the General Railway Signal Co.'s works at Rochester, N.Y., and in 1912 was appointed Assistant Resident Manager at Chicago, which position he vacated July 1, 1916, to take charge of the company's munition plant at Rochester. V. I. Smart, who has been with the General Railway Signal Co. of Canada for several years, has been appointed Consulting Engineer for the company at Lachine. The other officials are C. Leluau, Secretary-Treasurer, and H. W. Chamberlain, Assistant Secretary-Treasurer.

THE VICTORIA ROLLING STOCK AND REALTY CO. OF ONTARIO, LTD.

NOTICE is hereby given that a dividend of 4% on the paid-up capital stock of the Company for the six months ended May 31st, 1917, has been declared payable June 1st, 1917, to the shareholders of record as of the 31st of May, 1917.

By order of the Board,
H. F. MARRIOTT, Secretary.
Toronto, May 17th, 1917.

THE TORONTO, HAMILTON & BUFFALO RAILWAY COMPANY.

Notice is hereby given that the Annual General Meeting of the Shareholders of this Company, for the election of a Board of Directors, and for the transaction of such other business as may be brought before the meeting, will be held at the Head Office of the Company, in the City of Hamilton, Province of Ontario, on Tuesday, June 5th, 1917, at 11 o'clock in the forenoon.

DWIGHT W. PARDEE,
Secretary.
Hamilton, Ont., May 5, 1917.

NOTICE.

The General Railway Signal Company of the United States of America, the owner of the exclusive rights to Canadian patents No. 92323, No. 93127, No. 96256, and No. 97758, issued to Young and Townsend, and covering methods of signalling electrified railways, wishes to call the attention of all possible users of the devices and systems covered by such patents to the facts that it is prepared to sell and furnish, at short notice, all such devices and to install such systems upon any railway in the Dominion of Canada.

All inquiries regarding the above should be addressed to The General Railway Signal Company of Canada, Limited, Lachine, Province of Quebec, Canada.

IMPERIAL BANK OF CANADA

Capital Authorized.....$10,000,000
Capital Paid up..... 7,000,000
Reserve Fund..... 7,000,000

Head Office: Toronto.

Letters of Credit, Travellers' Cheques and Drafts issued, available in all parts of the World.

Sterling and New York Exchange bought and sold.

Savings Department: Interest allowed on deposits at best current rates.

Branches throughout the Dominion of Canada.

Car Closets
Flush or Dry
DUNER CO. 101 S. CLINTON ST. CHICAGO

GRIFFIN & BRINKERHOFF
P.O. Box 97, Windsor, Ont.
Canadian manufacturers of the Celebrated Wheel Truing Brake Shoe. Best Wheel Grinders in the World.

THE CANADIAN PACIFIC RAILWAY COMPANY.

NOTICE.—The Canadian Pacific Railway Company will apply to the Parliament of Canada, at its present session, for an Act empowering the Company to convert into denominations of the currency of the United States of America, any Consolidated Debenture Stock or Preferred Stock heretofore or hereafter issued in denominations of Canadian currency or of sterling money of Great Britain, to issue in denominations of said currencies any Consolidated Debenture Stock or Preferred Stock to be hereafter issued and to convert and re-convert the same from one to another of said denominations.

Dated at Montreal, this 25th day of April, 1917.

ERNEST ALEXANDER,
Secretary.

THE CANADA SOUTHERN RAILWAY COMPANY.

St. Thomas, Ont., May 12, 1917.

The Annual General Meeting of the Shareholders of The Canada Southern Railway Company, for the election of Directors, and for other general purposes, will be held at the Company's Head Office in the City of St. Thomas, Ontario, on Wednesday, the 6th day of June, 1917, at 11 o'clock in the forenoon.

DWIGHT W. PARDEE,
Secretary.

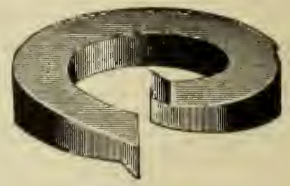
CANADIAN PACIFIC RAILWAY COMPANY.

Dividend Notice.

At a meeting of the Board of Directors, held to-day, a dividend of two and one-half per cent. on the Common Stock for the quarter ended 31st March last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account, was declared payable on 30th June next to Shareholders of record at 3 p.m. on 1st June next.

By order of the Board,
ERNEST ALEXANDER,
Secretary.
Montreal, 2nd May, 1917.

The Positive Lock Washer
is the BEST Nut LOCK for all purposes



We also make plain coils and tail nut locks
The Positive Lock Washer Co.
Sole Mfrs., Newark, N.J.
F. H. HOPKINS & CO., Agents, Montreal

FOR TICKET CASES AND COMMERCIAL FURNITURE
of all descriptions to stock or special design, apply to
The Canadian Office and School Furniture Co., Limited
Preston - Ontario

Loading
Northern Electric
Railway Signal Wire
from one of the big shipping platforms of the Company's Montreal plant.

There has been no compromise with quality in the manufacture of

Northern Electric

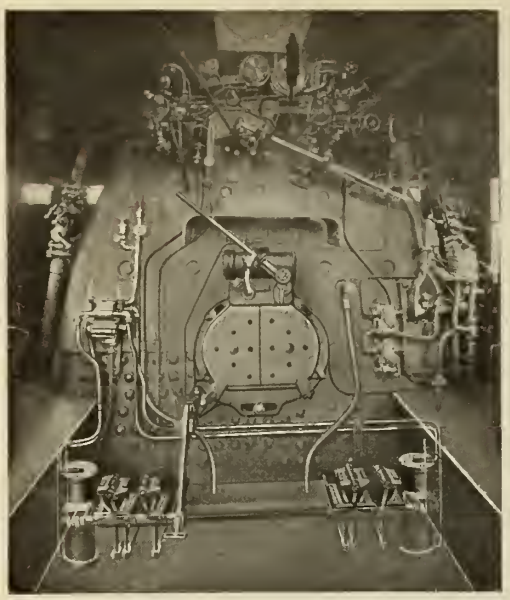
RAILWAY SIGNAL WIRE AND CABLE

Made in strict accordance with R. S. A. Specifications and used by every steam and electric road of any consequence in Canada. It always pays to buy the best.

Northern Electric Company

LIMITED

Montreal - Halifax - Ottawa - Toronto - London - Winnipeg - Regina - Calgary - Vancouver



Help the Overworked Fire

Five years ago 32,000 pounds tractive power required a certain grate area.

Today 45,000 pounds tractive power is supplied with the same grate area.

That's because the grate can't be made and bigger.

This is one reason why we developed the Franklin Steam Grate Shaker.

To help the grates do their work by keeping them free from ash and clinkers.

Franklin Railway Supply Company

TRANSPORTATION BLDG. MONTREAL

High Efficiency

Centrifugal Pumps

Any drive—Any head—Any capacity

Write to-day for catalog and let us know your requirements.

The Canadian Fairbanks-Morse Co., Limited

ST. JOHN, QUEBEC, MONTREAL, OTTAWA, TORONTO, HAMILTON, WINDSOR, WINNIPEG, SASKATOON, CALGARY, VANCOUVER, VICTORIA.

CANADA'S DEPARTMENTAL HOUSE FOR MECHANICAL GOODS

PREPAREDNESS—Many of our customers have been applying large numbers, and in some cases complete installations, of Tate Flexible Staybolts to their locomotive fireboxes, and thus are prepared to handle the heavy business during the present season.

THE TATE FLEXIBLE STAYBOLT has been used quite extensively since 1904 in the locomotive fire boxes, and its service records all go to prove that it has done more to improve conditions of staying and preserve the life of the firebox than any staybolt so far used.

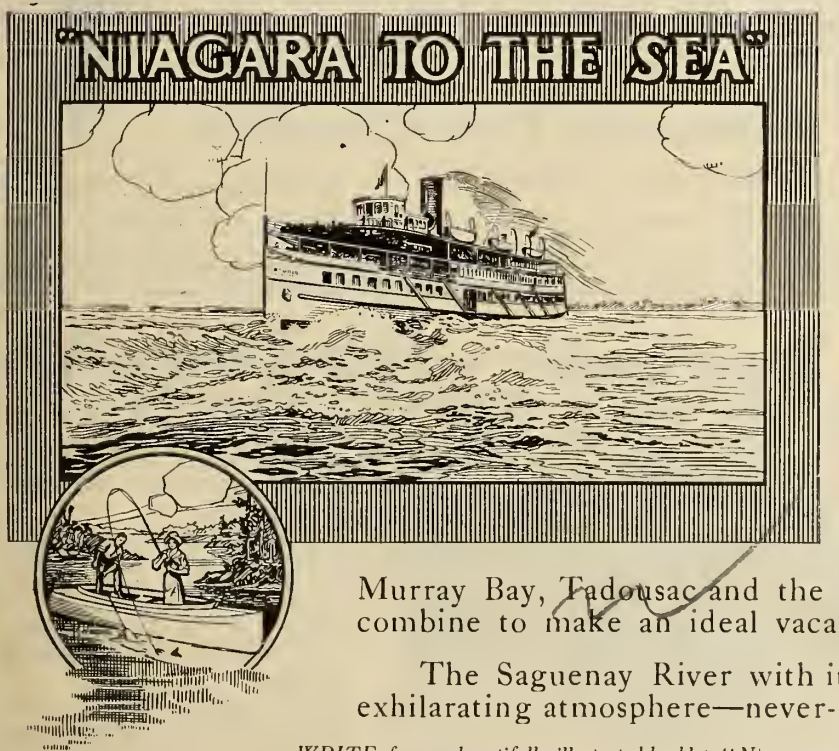
WE RECOMMEND THIS BOLT to the railroads of Canada and to all users of the firebox type of boiler where staybolts are necessary, with the assurance that it will be found strong, serviceable, economic and most effective in reducing staybolt breakage and firebox repairs.

KEEP STANDING
LAST ADVERTISEMENT

OVER 16,000,000 BOLTS IN SERVICE.

FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.



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MAKES this famous 800 mile trip through America's greatest, and most interesting Waterway the Vacation Trip without parallel.

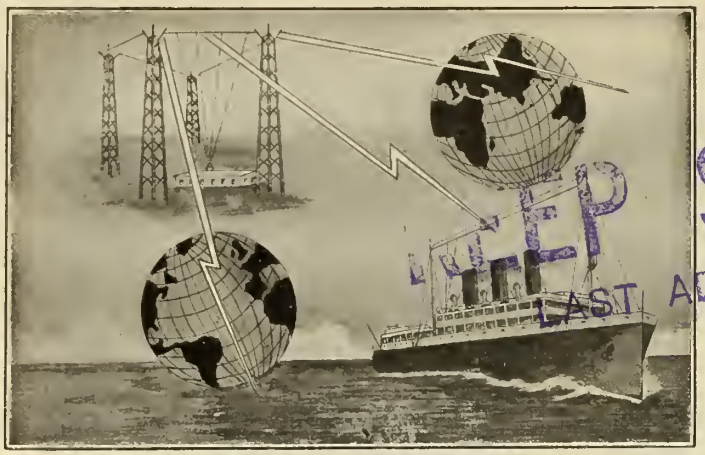
The service on our palatial steamers is unexcelled. The Falls of Niagara, the Thousand Islands, the Rapids of St. Lawrence, quaint old Quebec, Murray Bay, Tadousac and the Saguenay—all these attractions combine to make an ideal vacation trip.

The Saguenay River with its wealth of scenic beauties—its exhilarating atmosphere—never-ending source of enjoyment.

WRITE for our beautifully illustrated booklet "Niagara to the Sea". It tells about a vacation trip every minute of which you will enjoy. Enclose 2c. to cover postage.

Canada Steamship Lines, Limited

46 Yonge St., TORONTO
R.&O.Bldg., MONTREAL
or any Ticket Agent.



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STATIONS 80% ARE ON THE MARCONI SYSTEM.

LET US SUBMIT SUGGESTIONS !

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Wireless Telegraph Apparatus

MADE IN CANADA.

Wireless equipment of all kinds supplied: Land, ship, railway and aeroplane sets with ranges of from 50 to 2,000 miles.

Have you considered the advantages of connecting up factory or mine to head office by wireless telegraphy?

SHIP SETS—Suitable for liners, yachts, tugs and freight boats and scows—our specialty.

Our stations may be hired or bought outright.

The Marconi Wireless Telegraph
Company of Canada, Limited

Shaughnessy Building, MONTREAL

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Thor
Universal Electric Drills

LICENSED UNDER BURKE UNIVERSAL MOTOR PATENT

The only Portable Electric Tools made that are equipped throughout with ball and roller Bearings. Made with aluminum cylinder insuring extreme lightness and a powerful specially constructed motor resulting in increased capacity. Can be furnished with Universal, Alternating or Direct current motor 110 to 250 volts.

SHIPPED ON TRIAL—FREE

KILL LAST AD.

000	Drilling Capacity		¼-in.
00	"	"	5-16 in.
0	"	"	⅜-in.
01	"	"	½-in.
1	"	"	9-16-in.
2	"	"	⅞-in.

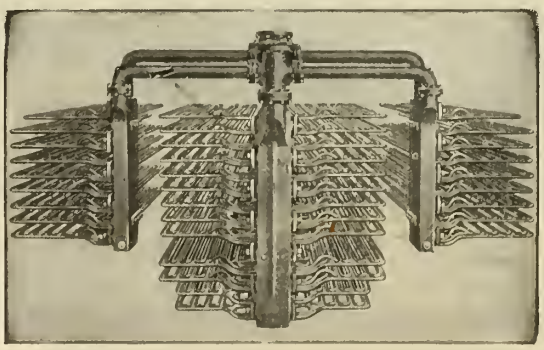
No. 6 Electric Grinder. wheel 4-in. x ¾-in.

Independent Pneumatic Tool Company
334 St. James Street, Montreal, Que.

Toronto—32 Front St. West Winnipeg—123 Bannatine Ave. East Vancouver—1142 Homer Street

Fire Tube Marine Superheater -- Eight Reasons Why

1. It is adaptable to either new or existing boilers of the fire tube type, and can be applied with no change in design or construction.
2. It renders possible an increase in output of boiler h.p. from a given boiler plant 10% to 20%.
3. It will produce the same power output with fewer boilers.
4. It reduces the size of the bunkers, thereby reducing the draft of the vessel with a given cargo, or making possible an increase in revenue cargo.



5. It results in a saving of fuel over saturated plants, both operating under the same draft conditions, of 10% to 20%.
6. It reduces the maintenance costs by the prevention of water hammer, leaky flanges, and condensation in the cylinders.
7. It does not prevent rapid, thorough, and frequent cleaning of the tubes.
8. Its construction provides easy access to all screwed joints and the easy removal of the parts.

LOCOMOTIVE SUPERHEATER COMPANY

30 Church Street, New York, N.Y. Peoples Gas Bldg., Chicago, Ill.

Dominion Iron & Wrecking Company
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Railway Equipment, Rails and Machinery

Dismantlers of BRIDGES, PLANTS, STEAMERS, MILLS
Dealers in IRON, STEEL, SCRAP METALS

General Offices: Transportation Building - - MONTREAL, QUE.
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ECONOMICAL—SYSTEMS OF MERIT—WILL NOT FREEZE

VAPOR SYSTEMS
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VAPOR AND PRESSURE SYSTEMS
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AUTOMATIC HEAT CONTROL FOR ALL SYSTEMS—VENTILATORS

346 St. James Street MONTREAL, CANADA

Canada Iron Foundries, Limited

Chilled Tread Cast Iron Car Wheels for All Services
Cast Iron Water, Gas and Culvert Pipe,
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Jas. W. Pyke & Company, Limited

Iron, Steel and Metal Merchants

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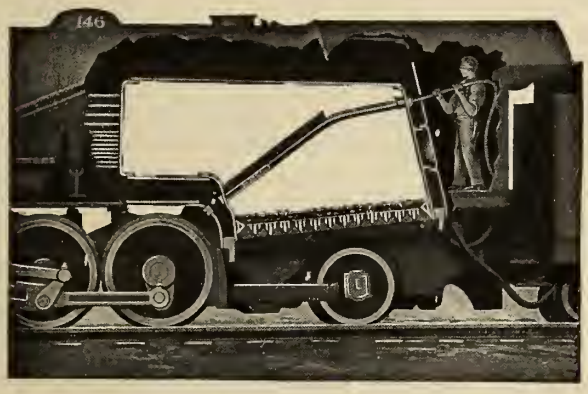

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Scale forms in the Water Arch Tubes of Locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

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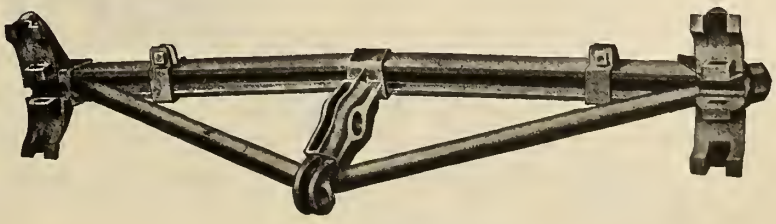

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20 in.	2½	¾, 1, 1¼, 1½, 2 in.	7.50	2.50	¾, 1, 1¼ in.	1.00
					1½, 2 in.	1.25
25 in.	3½	1½, 2, 2½, 3 in.	7.50	3.00	1½, 2, 2½, 3 in.	1.25

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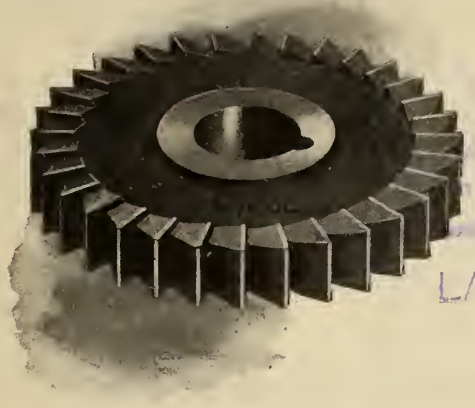

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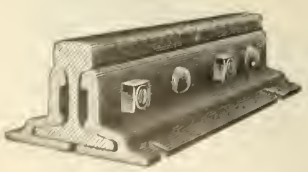

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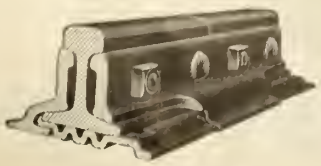

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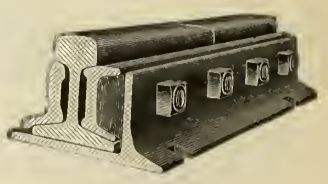

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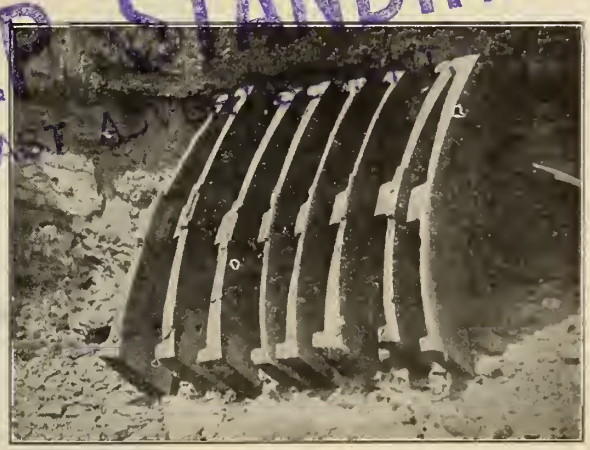

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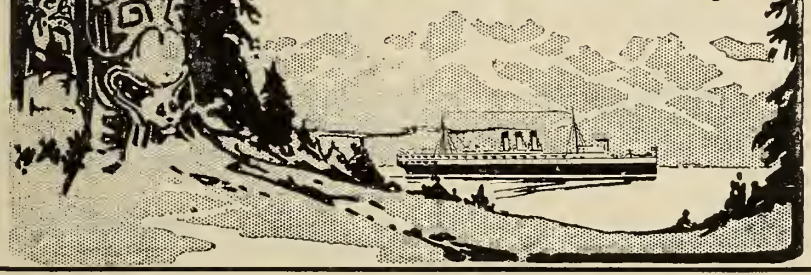

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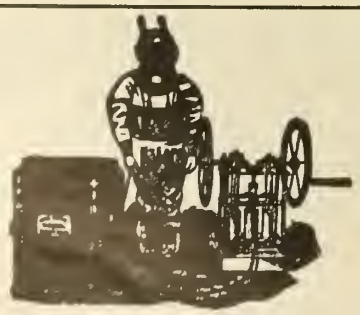

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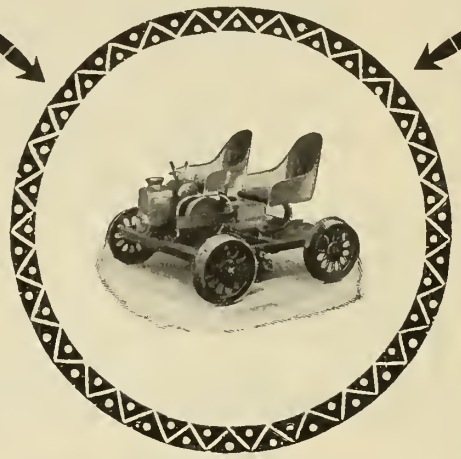

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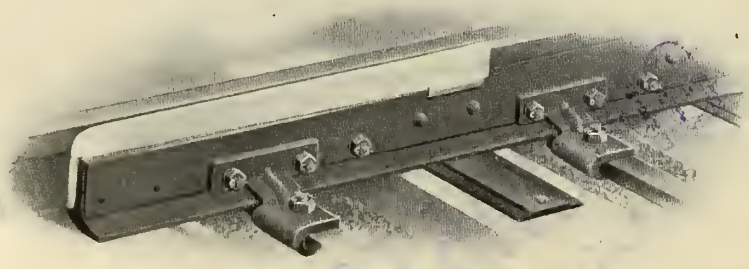

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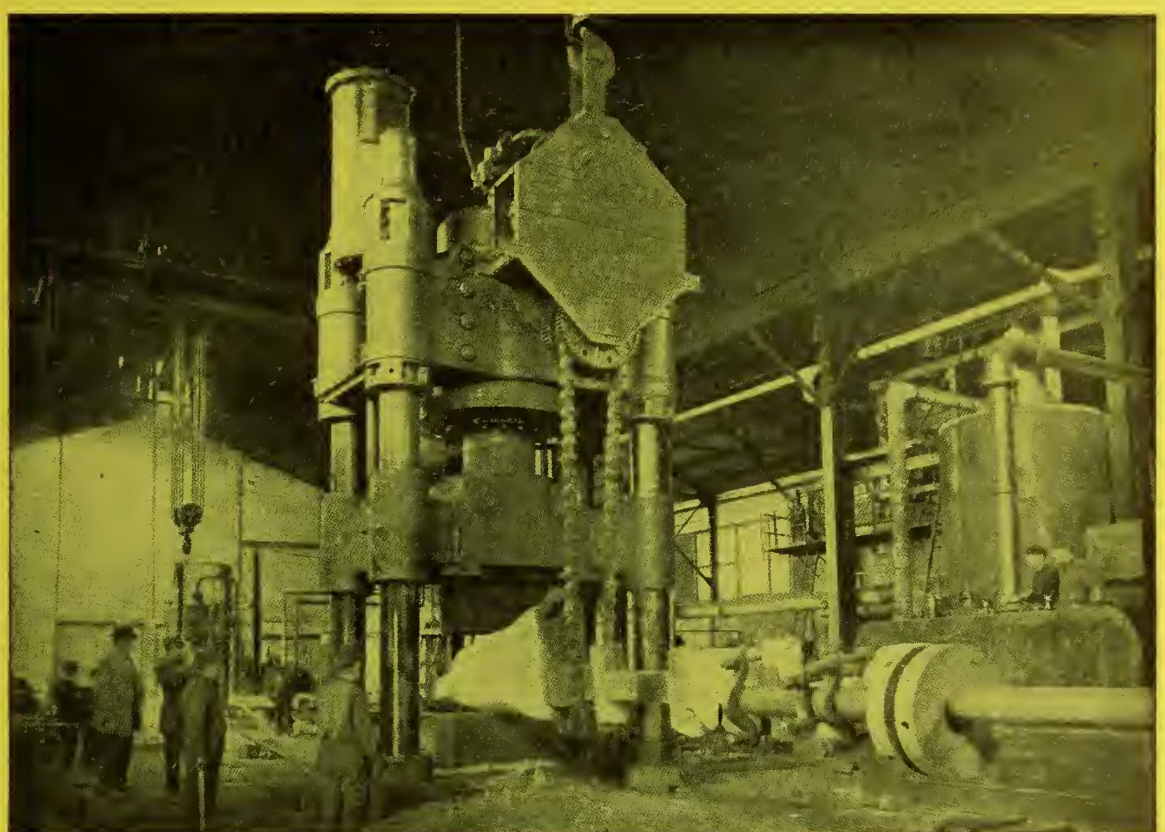
Manufacturers of Steel for Shrapnel Shells and Admiralty Forgings | Only Company in Canada producing Steel Ingots by the "Harmet" liquid process

Can supply Forgings up to 40 Tons in weight to all Admiralty and Lloyd's Tests and Specifications



FORGING A RUDDER FRAME

Why "Harmet" Liquid Process Steel Ingots are Superior to Ordinary Steel Ingots:—

1. Prevention of cracks due to shrinkage; of internal stresses and resulting cracks and fissures.
2. Early cessation in the crystallization of the metal, and the production of fine crystallization without cleavage planes.
3. Lessening of segregation, i.e., reduction of tendency of carbon and other impurities to concentrate in the central and upper parts of the ingot.
4. Prevention of "pipes" or interior cavities, and thus preservation of absolute solidity in the ingot.
5. Improvement in physical properties.
6. Reduction in waste of ingot.

OUR modern Steam Hydraulic Forge Shop at New Glasgow, N.S., part of which is shown above, and our large Steel Plant at Sydney Mines, N.S., equal the very best in America.

On the shortest notice, we can supply forgings of all shapes and sizes, made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

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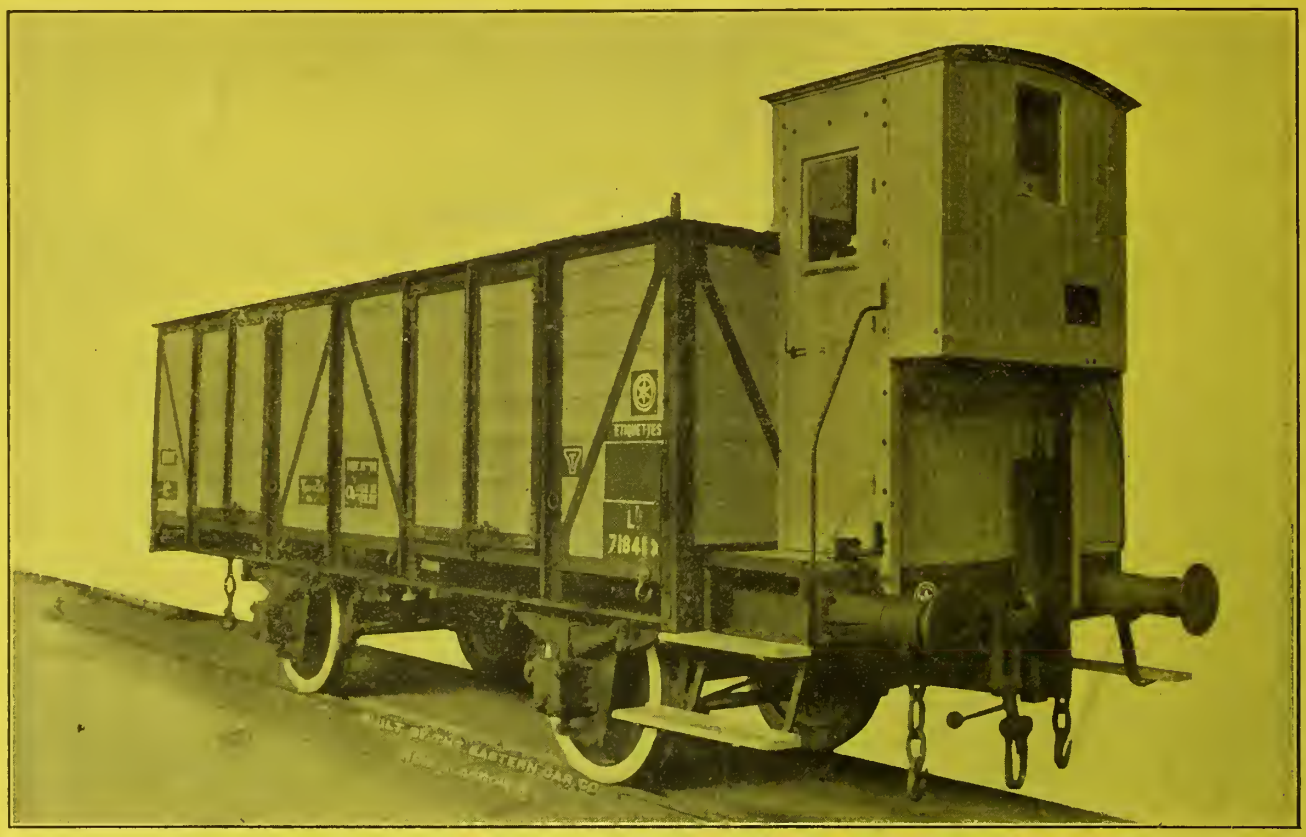
For prices and full particulars, write to

Head Office, NEW GLASGOW, N.S.

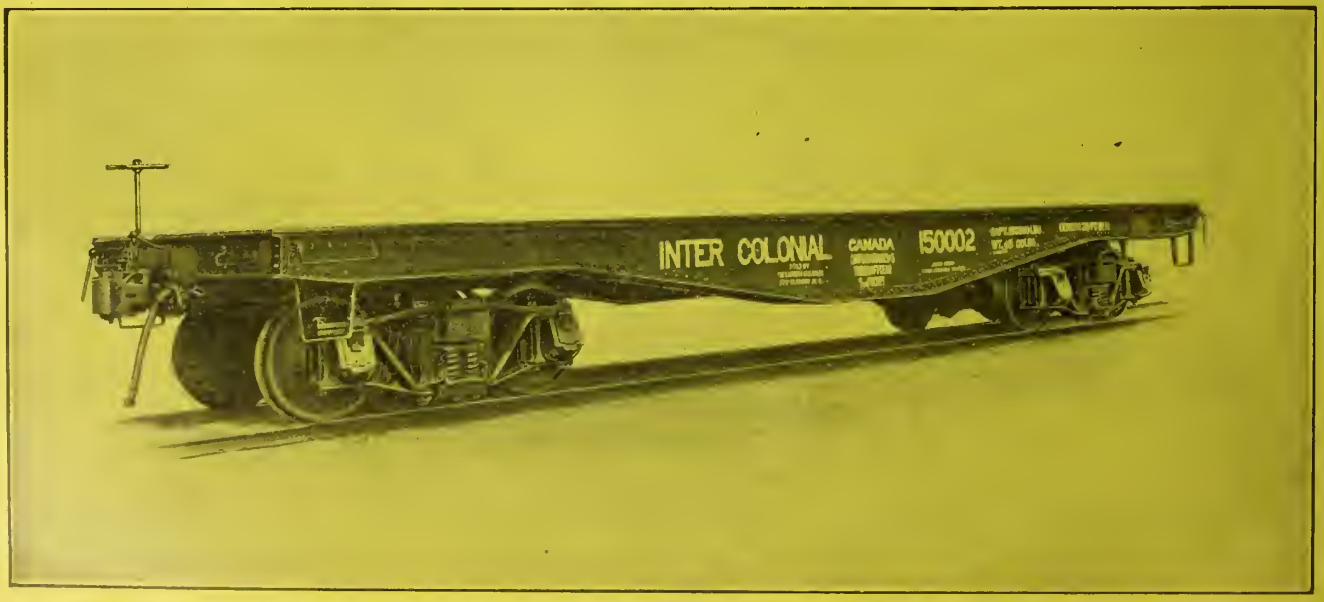
Western Sales Office, Room 14, Windsor Hotel, Montreal



ONE OF 2,000 GONDOLA CARS NOW UNDER CONSTRUCTION FOR THE FRENCH GOVERNMENT.

FREIGHT CARS TO FOREIGN ORDER

We have unexcelled water and rail shipping facilities for the export of freight cars of all types abroad or to United States markets. Our manufacturing capacity reaches to 40 cars per day. Although fully employed in filling and conducting negotiations for further foreign orders, our exceptional output facilities enable us both to take care of these and others in the order in which they are received.



75 TON SPECIAL PIT CAR FOR CANADIAN GOVERNMENT RAILWAYS.

FLAT CARS, CABOOSES, AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

Eastern Car Company, Limited

General Offices and Works, New Glasgow, N.S. **Montreal Office, Room 14 Windsor Hotel**

Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 233 | TORONTO, CANADA, JULY, 1917 | Subscription Rates, Page 277

A Costly Crane Experience

One of the large railroads asked for quotation on a Brownhoist Locomotive Crane. They wanted this crane for a certain piece of construction work.

This road had always used Brownhoist Cranes and they knew what these cranes could do. But at this time they thought that they would economize a little and they bought a different crane. It was put on the work.

Three weeks later, the road called us by phone and ordered the Brownhoist Crane, saying: "And let us have it at once." The Brownhoist was put on the job and did the work that they expected from a locomotive crane. It was a costly lesson and one that isn't forgotten very soon.

It pays to use Brownhoist Cranes. They may cost more, but are worth it.

The Brown Hoisting Machinery Co.
CLEVELAND, OHIO

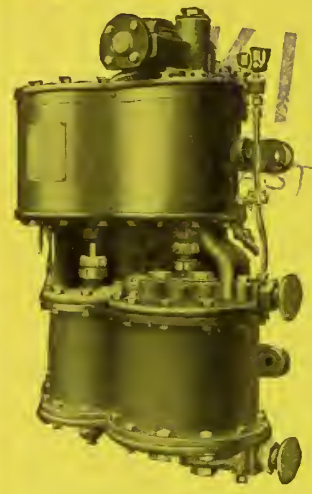
Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller cranes and hoists.

Branch offices in New York, Pittsburgh, Chicago, San Francisco and (Portland, Ore., Colby Engi. Co.)

Index to Advertisers, Page 88 | Purchasing Agents' Guide, Page 85

Westinghouse

Steam-Driven Air Compressor for Industrial Service



Westinghouse Cross Compound Compressor.

Economical to maintain.
Simple to operate.
Exceptionally durable.
Easy to move about.

Can be installed anywhere, on a post, a column, a wall, or a movable stand is provided. Our nearest office will give full particulars.

Westinghouse Single Stage Compressor

Canadian Westinghouse Company, Limited, Hamilton, Ontario

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WINNIPEG, 158 Portage Ave. E. CALGARY, Grain Exchange Bldg. VANCOUVER, Bank of Ottawa Bldg. EDMONTON, 211 McLeod Bldg.

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CARTER WHITE LEAD CO. OF CANADA LIMITED STRICTLY PURE DRY WHITE LEAD MONTREAL

It is a hard problem to keep rust and corrosion from eating the very life out of metal structures, therefore, economy demands the best possible preventive against these destructive elements.

CARTER'S
DRY RED LEAD

gives a perfect sealing coat that absolutely protects all kinds of metals from the elements that destroy them, and immeasurably lengthens the life of Metal Work.

We make Orange Dry Lead and Litharge, Special Dry Lead and Litharge, for Color, Varnish and Rubber Makers. Oxides for Potters and Storage Battery Makers.

All products are wholly Canadian made and highest standard qualities.

Ask us for quotations.

The Carter White Lead Co., Limited

91 Delorimier Avenue, MONTREAL

Faraday Push Button

ONE PUSH

and

Faraday High Voltage Car Signals

Unfailingly Signal STOP

Faraday Resistance

KILL
LAST AD.

Faraday car signal systems are for operation direct from the trolley circuit of from 500 to 600 volts. Their use eliminates entirely the cost and annoyance which almost invariably result from the use of battery systems.

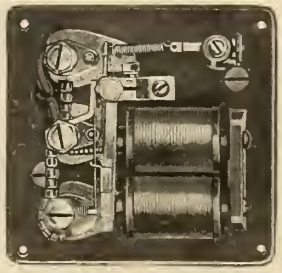
Faraday Resistance Panels contain resistance units in cartridge form so that the replacement of a resistance unit is an easy matter. These resistance units are absolutely permanent and are mounted on slate bases.

Faraday Push Buttons are designed especially for use on high voltage circuits. They are constructed particularly for car installation, are tamper-proof and when properly installed are absolutely unfailing in operation.

Faraday Bells and Buzzers are likewise unfailing in operation because they are properly insulated and protected from injury by cast iron covers which also make them absolutely waterproof. And because all Faraday bells and buzzers have platinum contacts and micrometer lock adjustments which cannot possibly change due to car vibration.

When you buy Faraday Car Signals you get the best equipment to be had and their use will mean that you can forget about car signal maintenance and its cost.

Write for complete data.



Faraday Buzzer

Electric Service Supplies Co.

PHILADELPHIA NEW YORK CHICAGO
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Lyman Tube & Supply Co., Ltd.

MONTREAL **TORONTO**
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WHITE LEAD

It has been making good for nearly forty years, absolutely pure and uniform in quality.

Enjoys the confidence of practical PAINTERS

It can be depended upon to produce paints that look beautiful, wear well and give maximum protection.

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That Stands the Test of Time and Weather

You are invited to send us specifications to quote on:

Wires, Copper or Galvanized. Bolts—Nuts —Rivets—Washers—Screws— Poles Steps— Guy Clamps—Cross Arm Braces—Track Equipment—Forgings.

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OF

CANADA

LIMITED

HAMILTON - - MONTREAL

GENERAL RAILWAY SIGNAL COMPANY
OF CANADA LIMITED

Railway Operating Engineers, Manufacturers and Contractors
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling
Electric Interlocking

Electric Interlocking

Mechanical Interlocking

Highway Crossing Gates

Highway Crossing Bells

A-P-B. Automatic Block Signals for Single Track

A-C. and D-C. Automatic Block Signals for Double Track

Advantages of Absolute-Permissive Block Signaling (A-P-B)

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signaling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.

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GUARANTEE COST per thousand miles for from one to five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organization of skilled railway mechanics of wide and varied experience. Services of Experts furnished free of charge to patrons interested in the economical use of oils.

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USE

Galena Railway Safety Oil

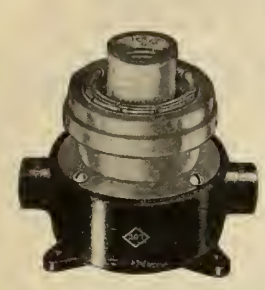
in Headlights, Marker and Classification Lamps, to secure Efficiency of Service, Maximum Candle Power, Clearness of Light.

Galena Long Time Burner Oil

for use in Switch and Semaphore Lamps, and all lamps for long time burning, to avoid smoked and cracked chimneys and crusted wicks.

Tests and Correspondence Solicited.

Railway Condulets



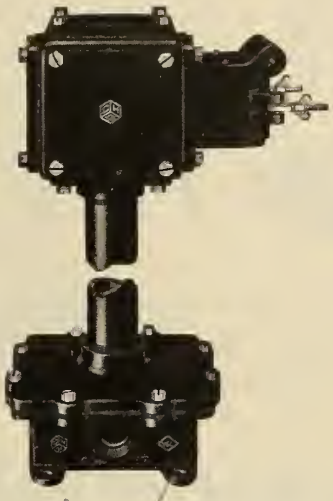
Type LOC
With Reflector Holder and Socket CRSEI

Type DSOC
Takes Various Round Base Fittings

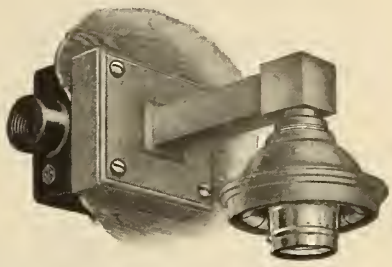
Type BLMC
Takes Various Round Base Fittings

Type DSPA
With Receptacle and Receptacle Mounting Plate

Type KRY
With one of Various Fittings it will Take



Single Outlet Yard charging Condulet for Underground Conduit System—Type UGC Condulet used as Base



Type KRR
With one of Various Fittings it will Take

Type JRRH Hood
For use on Type KRY with Round Base Fittings

Type BRHS
With 100-Ampere Receptacle and Plug-Battery Charging Equipment for Cars

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Northern Electric Company
LIMITED

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Repairing a Fractured Car Truck Frame.

Profits for Railroads in Oxy-Acetylene Welding and Cutting

Immense savings in time and money are being made daily by the great Railroad Companies of North America with the Prest-O-Lite Oyx-Acetylene welding and cutting process.

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employs Dissolved Acetylene and Compressed Oxygen in convenient cylinders, ready to use. Apparatus consists of an equal pressure blow pipe, automatic regulators and gauges, and all necessary equipment. This welding outfit is portable and handy for use on inside or outside jobs. The Prest-O-Lite system of exchanging your empty cylinders for full ones insures perpetual service. With this apparatus you are sure of better welds, quicker work and lower operating costs.

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Call or write for full particulars. Consultation and Demonstration FREE. Our Literature describes the Prest-O-Lite Torches for brazing and soldering, also hundreds of profitable uses for welding in construction and repair work. Write for it. Address Dept., C-9

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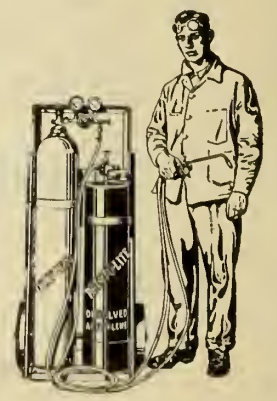

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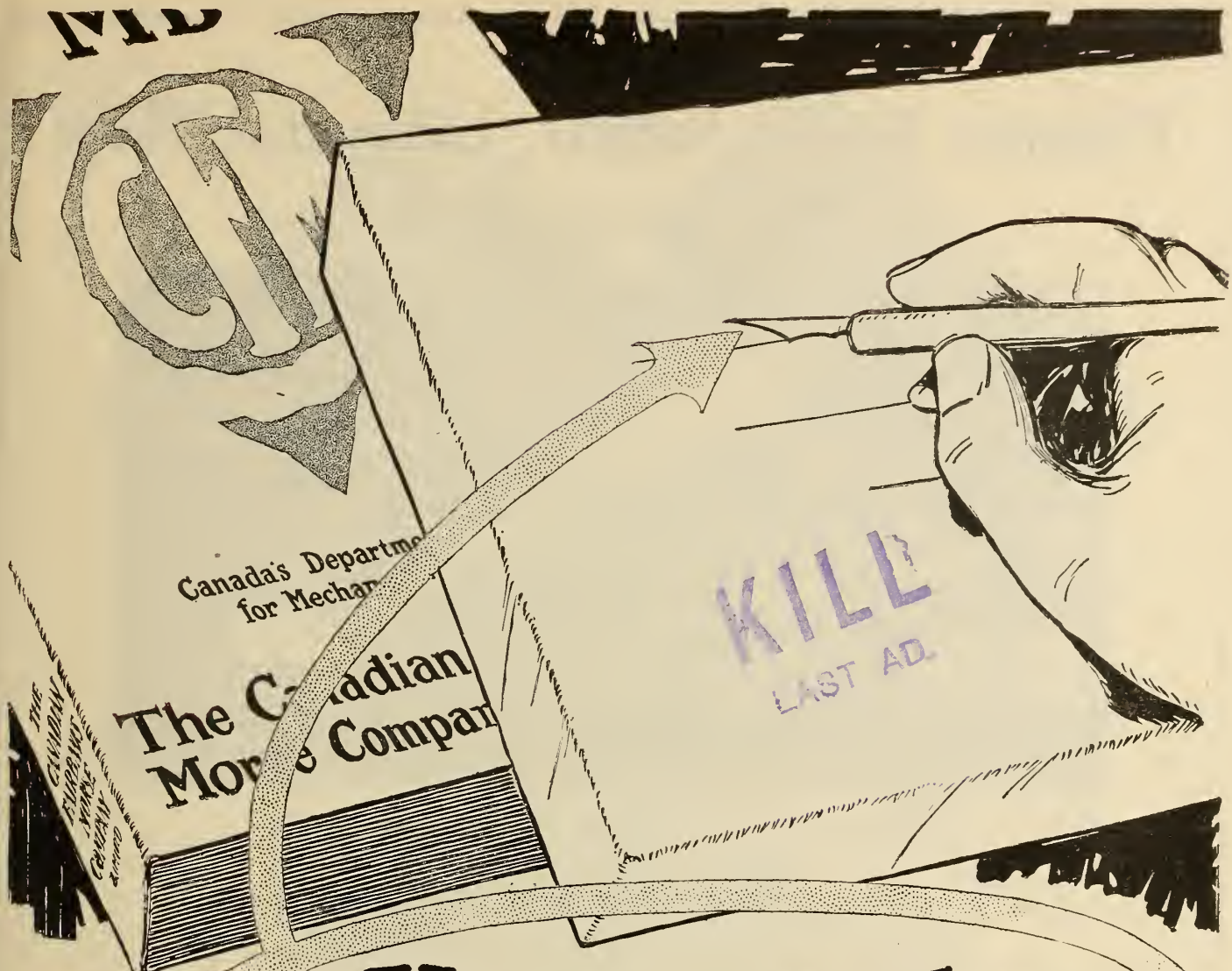

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Locomotive Turn Tables, Structural Steel
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Estimates furnished on application.

The Canadian Bridge Company, Limited
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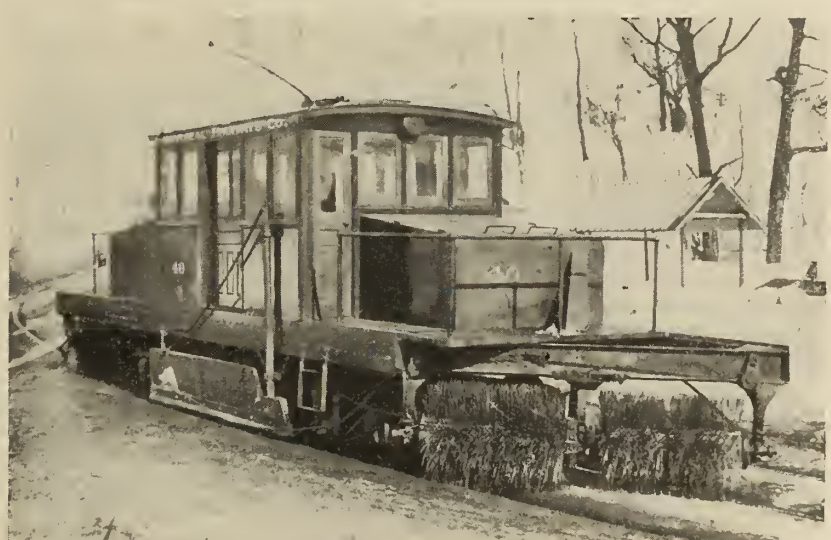
Highest Efficiency

CARS
Made Right

Lowest Upkeep Cost

OTTAWA CAR
Manufacturing Co., Limited
are Designers and Builders of

Electric City and Interurban Passenger cars. Electric express cars and locomotives. Sprinklers and work cars. Car seats, car curtains and a very large variety of brass and bronze car fittings.



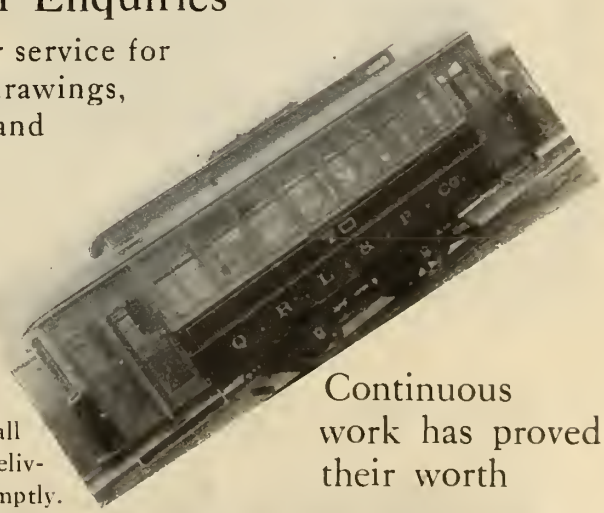
Snow Sweepers and Plows — the most perfect design and construction, simple mechanism quick and effective operation. An immediate delivery can be made of Standard Sweepers, special types designed and built or built to your own specifications.

"Send Them Your Enquiries"

as they are at your service for specifications, drawings, estimates and prices

Always Ready for Service

Satisfaction assured on all orders and deliveries made promptly.



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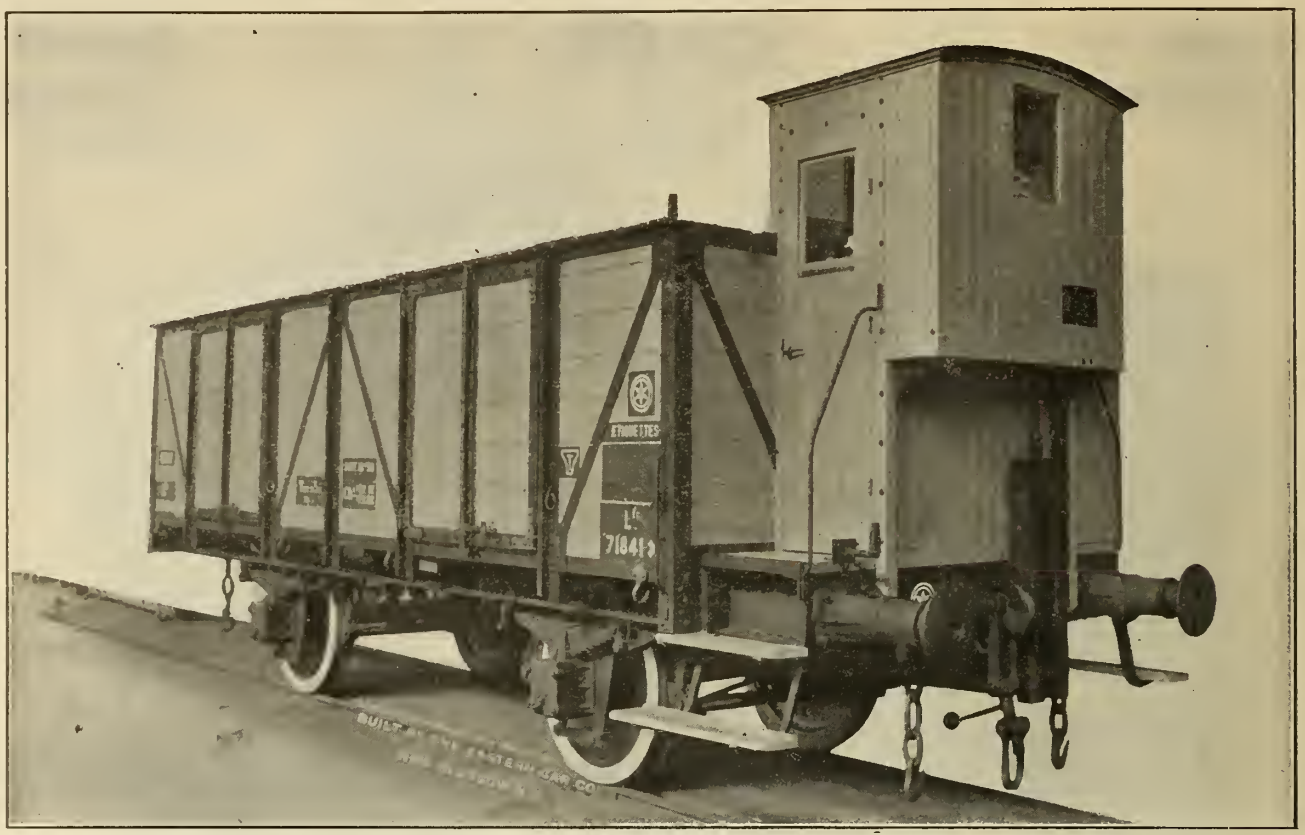
Remember the Address: Cor. KENT and SLATER STS., OTTAWA, ONT.



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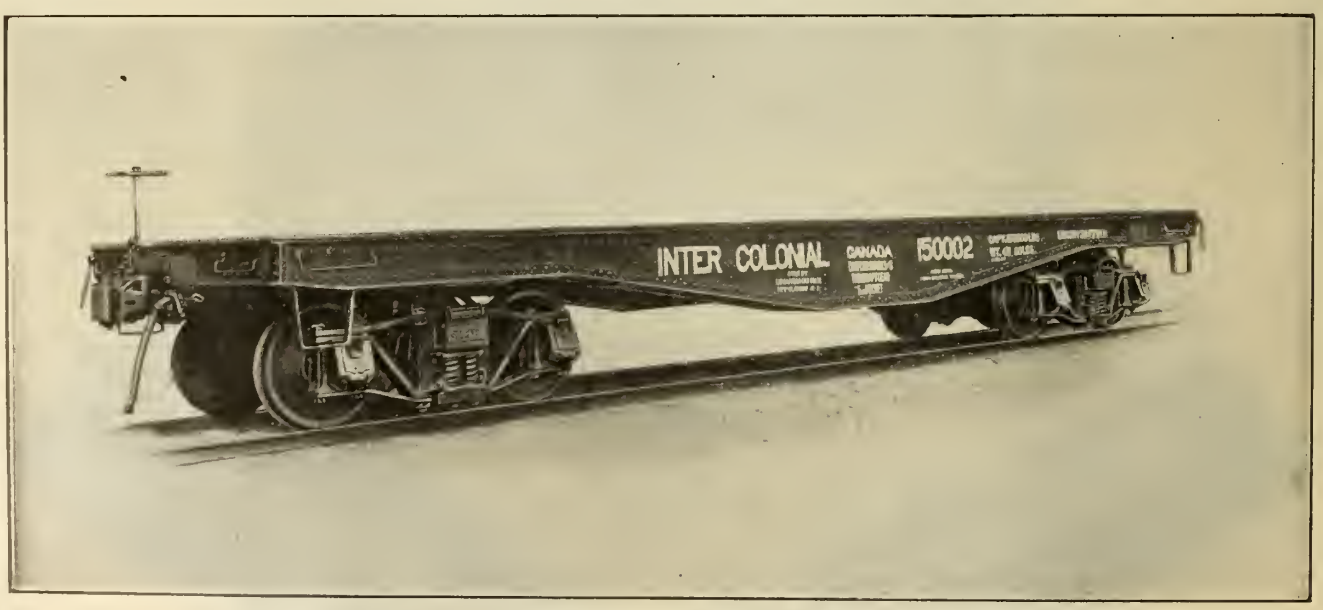

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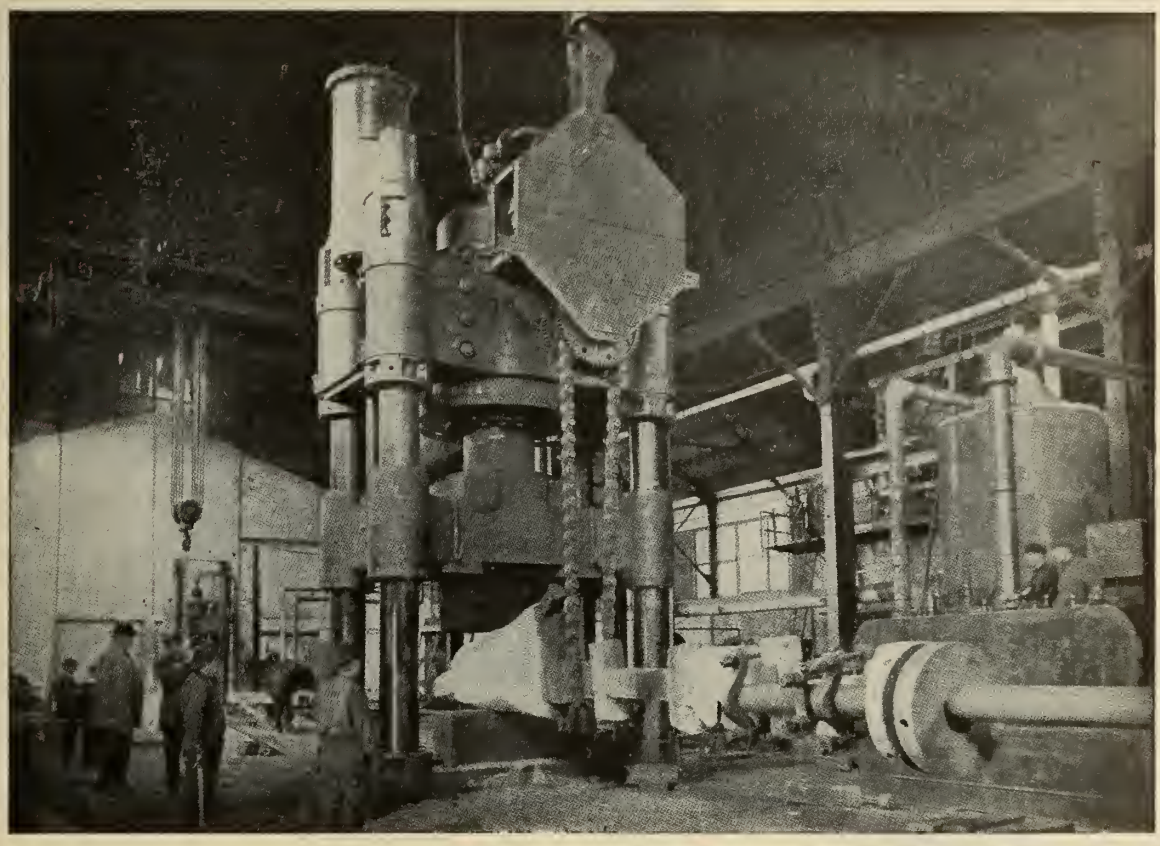
Can supply Forgings up to 40 Tons in weight to all Admiralty and Lloyd's Tests and Specifications



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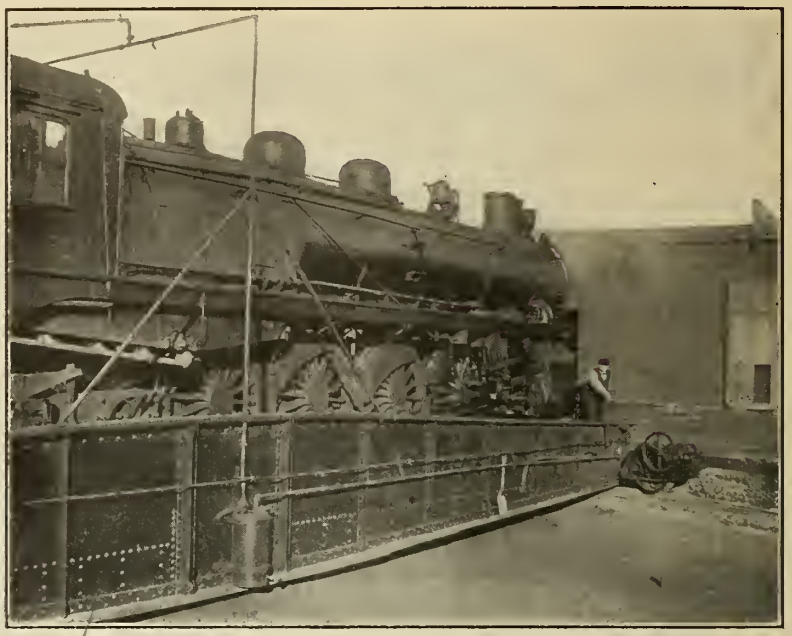
is operated successfully from the Atlantic to the Pacific. Operated by either air or electric motor.



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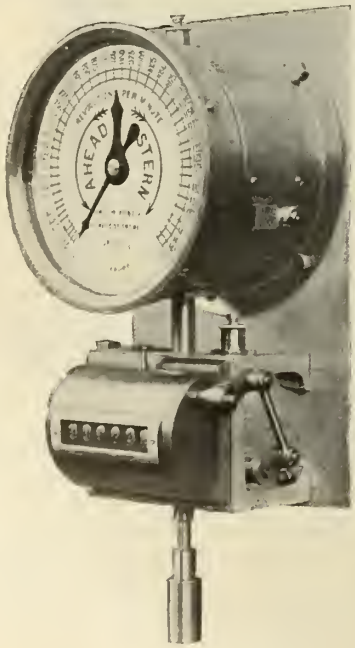
Canadian Pilling Turntable Tractors

Taylor & Arnold, Limited

Montreal **Winnipeg** **Vancouver**



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Ships Telegraphs for Engine, Twin Engine, Stokehold, Steering and Docking

Chadburn's (Ship) Telegraph Co'y, Ltd.
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BUY THE "BEST"

"DOMINION" Wire Rope

FOR DREDGES

The Dominion Wire Rope Company, Limited

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General Service Cars

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For Standard or Special Service

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"Alexander" Car Replacers

Re-rail your Rolling Stock without calling out the WRECKING CREW.
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Velocipedes,
Push Cars,
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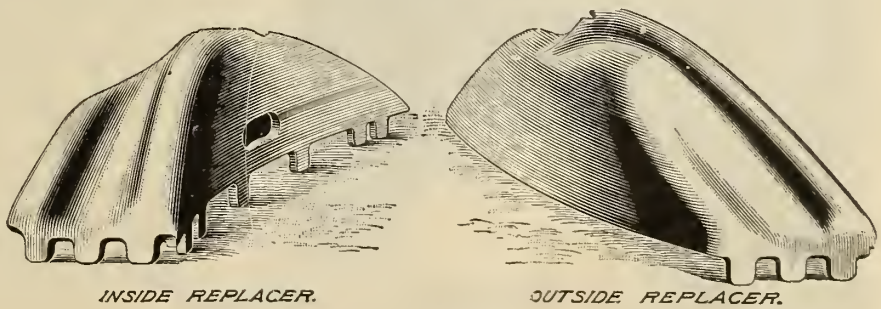

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It is True Economy in the Long Run

A limpid preparation easily applied to metallic surfaces by brushing or dipping, and forming a waterproof coating that excludes moisture.

A Combination Paint Reducing Oil

¶ As a rust preventive LIONOIL is not approached by any other material. It mixes readily with oils and pigments, it is a good strong dryer, and too much cannot be said as to its binding and hardening qualities. In tests made recently metal panels coated on one side with LIONOIL were subjected for three months to a humidity of 95 at a temperature of 80 degrees. The unprotected metal was completely corroded but not a speck of rust could be found on the side protected by LIONOIL.

¶ Rust is more destructive than wear. To prevent rust is to prolong service.

¶ To prolong the service of your rolling stock, use LIONOIL in your paint.

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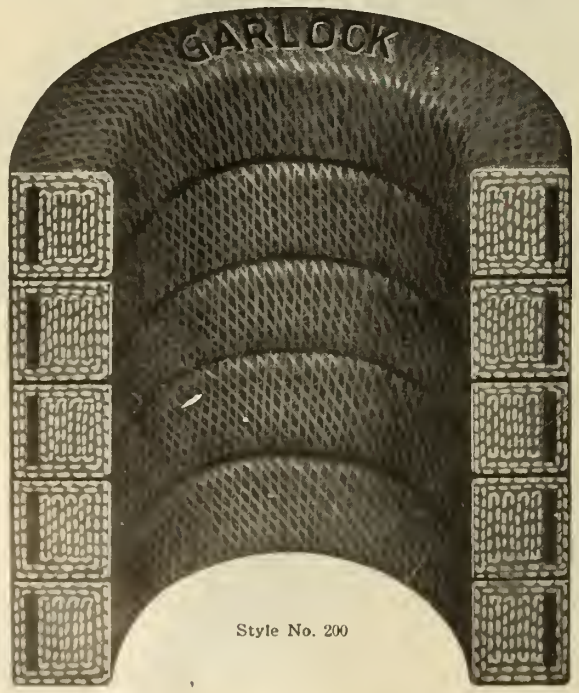
(INCORPORATED)
World's Largest Varnish Makers
WALKERVILLE, ONT.



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Garlock High Pressure Piston Rod Packing

Is built up in rectangular form and uniform shape and exact sizes are thereby obtained.

Asbestos packing, which is rolled around a rubber core and afterwards distorted by running through a square die, does not retain its shape or size.

The best materials we can buy are used in the manufacture of our high pressure packing.

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Our packings are sold at net weights; weights of tubes and boxes are not included.

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O-B Air Sander Valve
Diaphragm Type—Forged
(Patented)

O-B Air Sand Trap
Sectional View

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Sometimes the safety of the car depends on the Sander Equipment. And if the equipment has been built up with O-B Air Sander Specialties it can be relied upon in any emergency.

There are two types of O-B Air Sander Valves.

The diaphragm type is opened by pressure on the lever and closes automatically. The independent type is opened and closed by hand.

In the diaphragm type the plunger is made in two parts separated by a flexible metal disc. This effectually prevents the leakage of air around the stem.

This is only one of its good points. It is described with the O-B Sand Trap, O-B Reducing Valve and O-B Sander Hose on page 517-520 of catalog No 16.

The Ohio Brass Company
Mansfield, Ohio

KILL LAST AD.

LOOK AT YOUR FILES

Test the balance of them. See how hard they are. Run your finger over the teeth and note their sharpness and regularity.

These qualities of the "Famous Five" Files were not arrived at by accident.

They are the result of expert knowledge of the exact needs of every trade. This knowledge has helped us to standardize the merits of "Famous Five" Files in the mind of every user.

Specify them when ordering. They are:

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American **Arcade** **Globe**

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PORT HOPE **ONTARIO**

50 YEARS IN THE BUSINESS

OVER 60,000,000 FILES A YEAR

Enjoy Your Vacation

No matter where you go a pleasant journey is half the battle.

Round trip Summer Tourist Fares and Convenient Summer Train Service are now in effect to

The Pacific Coast	**The Rocky Mountains**
Jasper Park	**Mount Robson Park**
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Through Tickets, Reservations, Literature and Information on application to General Passenger Dept., Montreal, Que., Toronto, Ont., Winnipeg, Man.

Canadian Northern All The Way

Moore System

This car heater will protect perishable freight in coldest weather at minimum cost. It is substantially built; thoroughly guarded against injury to itself; simple to operate. It cannot set fire to car even though car be wrecked. It can be used in any insulated car.

Refrigerator, Heater & Ventilator Car Co.

St. Paul, Minnesota

SCALE

The object of the many expensive devices that are applied to locomotives for the purpose of saving fuel is defeated by scale gradually building up on the heating surfaces of the boilers.

It has been proven by careful investigation that the loss of efficiency due to scale formation is much greater than is generally known. Incrustation ranging from 1-32nd to 1-16th of an inch thick causes a loss of from 7 to 15% in heat units.

Investigation will show that the cost of **Dearborn Treatment** necessary to prevent scale formation is a small percentage of the saving that it is possible to make by keeping the heating surfaces of the boilers clean.

Send gallon samples of the water supplies for analysis and further information.

Dearborn Chemical Company of Canada, Limited

1220-1230 Dundas Street, TORONTO, CANADA

10 ft. 0 in. diam. 12 ft. 0 in. Scotch marine boiler for M. Beatty & Sons, Welland, Ont. This boiler was built for 125 lbs. working pressure; has one steam dome 36 inch diameter by 6 ft. 0 in. long, 172 tubes 3 in. x 9 ft. 4 in. long; two Adamson Joint furnaces and smoke box.

Steel Shipbuilders

Engineers and Boilermakers

Dredges, Hydraulic and Dipper Type; Steel Steamers, full Canal Size; Tugs, Barges and Scows

Marine Engines and Boilers, all Sizes

Polson Iron Works, Limited

Works and Office, Esplanade East, Toronto

YOU NEED "LITTLE DAVIDS"
FOR WOODEN SHIPBUILDING
—MORE WORK AND LESS WORRY—

Send for our Bulletin 8407. It will introduce some of the "LITTLE DAVID" family you should know. For example:

"Little David" Wood Borer: Three sizes, boring holes from 1" to 4" diam. Light in weight, powerful and reversible.

"Little David" Drill: Twelve sizes, reversible. Fifteen sizes, non-reversible. Besides their regular tasks of drilling, reaming, etc., most of these drills can be adapted to driving screw spikes, tightening nuts, running a portable circular saw rig for cutting out port holes, openings in bulk-heads, etc.

Other useful air tools we supply are our CC-101 Drift Bolt Driver and our No. 40 "Little David" Riveter for "horsing" in oakum.

Our nearest branch will be glad to give you full particulars.

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YOU CAN BETTER APPRECIATE THE WONDERFUL QUALITY OF

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Its base is a specially woven, very strong cotton cloth. The base of coated splits is a thick, pulpy piece of flesh, much weaker than the cloth. Both are coated with practically the same materials. Both are embossed or grained in the same way.

Fabrikoid is fully guaranteed.

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VII ORDER IT NOW

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Special Track Work

FOR

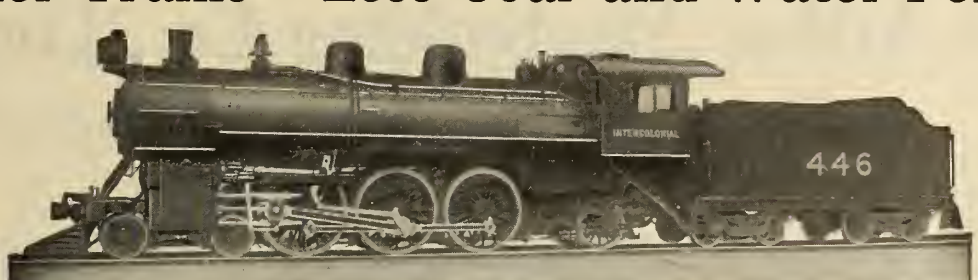
STEAM and ELECTRIC
RAILWAYS

We invite your enquiries for 1917 requirements.

Canadian Steel Foundries, Limited

P.O. Box 1630 - MONTREAL

Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE — INTERCOLONIAL RAILWAY
Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

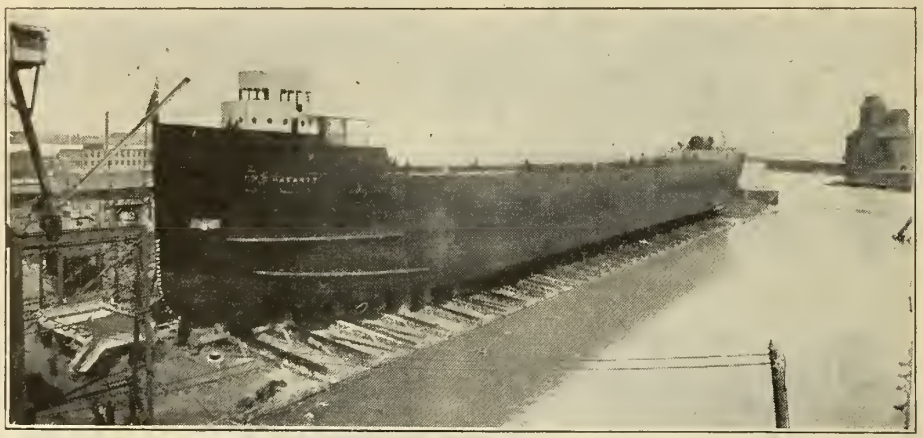
The Collingwood Shipbuilding Co.

Limited

COLLINGWOOD—ONTARIO—CANADA

Steel Ships, Engines, Boilers, Castings, and Forgings

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK



Steamer J. H. G. HAGARTY

Two Dry Docks
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EQUIPPED TO
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Day or Night
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Repairs

Port Arthur Shipbuilding Co., Limited

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Designers and Builders of every type of vessel, for both Great Lakes and Salt Water Service. 700 ft. solid concrete dock for repair work of every description.

Most Modern Ship Building Plant on the Great Lakes

Norton Jacks

For all Classes of Service

10 to 100 Tons Capacity

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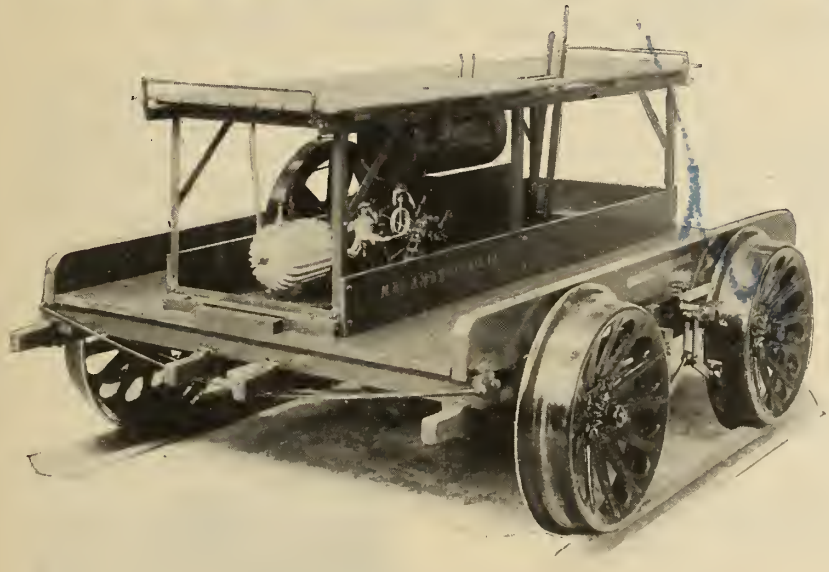
Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

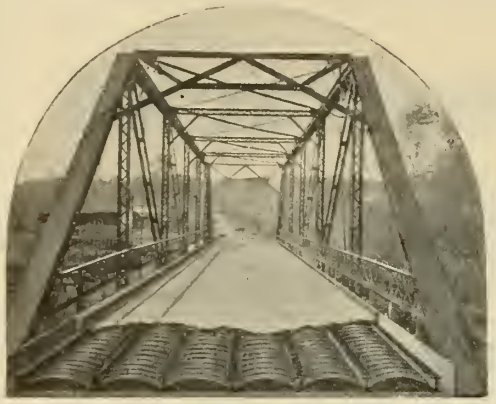
This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

Kalamazoo Railway Supply Company

KALAMAZOO, MICH., U.S.A.



Better Bridges at Lower Cost

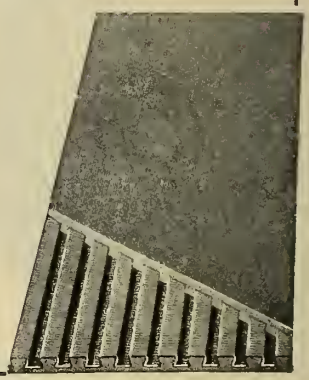
There is one outstanding reason why the leading road engineers and contractors have adopted Pedlar's Ferro-Dovetail system of interlocking concrete reinforcement for bridge floors and all extraordinary building. Pedlar's Ferro-Dovetail Plates produce such a low dead-load as to make for stronger, more durable, more dependable and lighter construction.

PEDLAR'S FERRO-DOVETAIL PLATES

The plates are laid between the beams or on bearings and the right mixture of concrete is applied and stamped in. On this the paving brick, stone, asphalt or other finish is applied, after which the under side of the metal is plastered.

Pedlar's Ferro-Dovetail Plates are supplied straight or curved for floors, and are therefore desirable for any form of construction. They show no deflection under loads far exceeding any possible requirements.

Made of 28 to 22 gauge steel or anti-corrosive Toncan Metal and formed into a series of ten lateral corrugations dovetailed in shape. The tapered sides of the dovetail shape corrugations make for an infallible clinch with the concrete and plaster. The plates are thus protected from the influence of air, water, gas and acid fumes—cannot corrode. Safe and economic. Write today for Pedlar's Ferro-Dovetail Pamphlet R.M.



THE PEDLAR PEOPLE, Limited
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Executive Offices and Factories: Oshawa, Ont.

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TRACKOLINE

THE CATTLE-PROOF CHEMICAL WEED KILLER

There is a psychological time to kill weeds with chemicals. Kill the germinating seeds and you will not have any weeds. Get the little weed before you have a heavy, thick growth and are compelled to waste a large part of the solution on foliage. Labor is scarce and high, the railways of the country will, in all probability be taxed to their capacity; therefore there is no time for inefficient, repeated hand weeding this year.

One barrel, approximately 55 gallons weighing 640 lbs, diluted with 20 parts water, kills the weeds on a mile of track 8 feet wide. It is easily and economically applied, no expert knowledge nor elaborate sprinkling devices being required.

Start early, get your **TRACKOLINE** and your equipment on the job, and be ready to make a one-time efficient solution of this weed proposition.

BEFORE TREATMENT

Send for testimonial letters from prominent railroad officials, and booklet.

Protective Materials Corporation

51 East 42nd St., New York City

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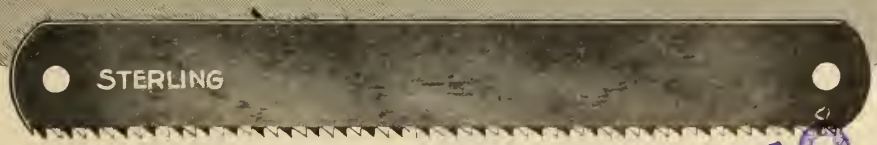
HACK "STERLING" SAWS



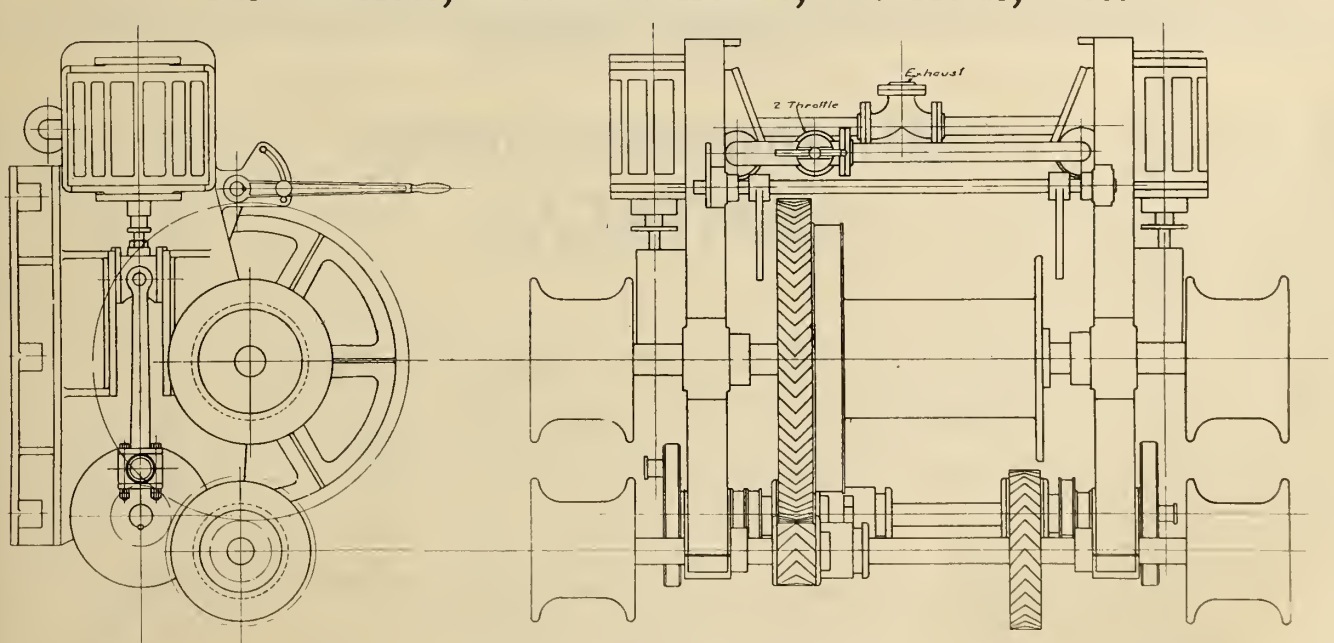
The "STERLING" Blade is a brand of highest quality, and is known the world over for its efficiency and economy. The best steel that can be procured is used in their production, together with skilled workmanship of many years' experience, enabling us to give the trade a strictly first class blade. They are made in all lengths and widths from 8 by ½ inches to 36 by 2 inches inclusive, and in gauges to give best results, varying pitch of teeth to suit the job.

Money invested in "STERLING" Blades will give you full returns.

Write for catalog and particuars.

Diamond Saw & Stamping Works, Buffalo, N. Y., U. S. A.

Cargo Winches, Trawl Winches, Anchor Windlasses, Ash Hoists, Dock Winches, Derricks, Etc.



Send us your specifications for Auxiliary Ship Machinery—We'll quote promptly.

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New Address
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Telephone No.
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Canadian Consolidated Rubber Co., Limited

Announce the removal of their EXECUTIVE OFFICES and the SALES DEPARTMENT of their MONTREAL BRANCH from Notre Dame Street East and Papineau Square to

The Rubber Building

201 Inspector Street
MONTREAL

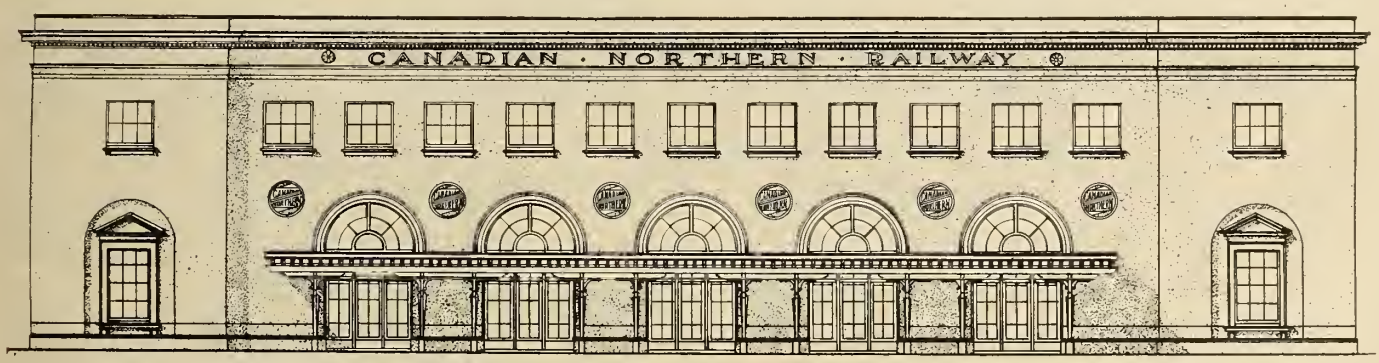
This location, being more central, will increase the facilities for a better and quicker service to the trade and to those in need of rubber.

Canadian Railway and Marine World

July, 1917.

The Canadian Northern Railway's Station in Montreal.

As previously stated in Canadian Railway & Marine World, a temporary station for the Mount Royal Tunnel & Terminal Co., Ltd., a subsidiary of the Canadian Northern Ry. Co., is being built at the corner of Lagauchetiere and St. Monique Sts., Montreal. It will be a reinforced concrete structure, with two stories above grade and one below. The exterior walls will be lined with 6 in. terra cotta blocks, with an air space between the concrete outer wall and the lining. The main facade will face Lagauchetiere St. The building will be of classic design, the passenger entrances being five large arched openings, above which will be medallions containing the C.N.R. Co.'s insignia. A dignified entablature in cement will surmount the building on all facades. Over the passenger entrances on Lagauchetiere St. will be a marquise, protecting the sidewalk from rain and snow. To the right of the building will be a court, formed on its outer side by a retaining wall 18 ft. high, which will run back for 50 ft. The court will be 33 ft. wide and will be paved with brick. It will serve as a wagon approach to the incoming baggage room, which will have two wide doors opening directly on the court.



Canadian Northern Railway Temporary Station, Montreal, Lagauchetiere Street Elevation.

A passenger entering the building from Lagauchetiere St. will go immediately into the entrance vestibule, which will be about 30 x 80 ft. It will be the heart of the building, from which all its activities will radiate. It will also be used, in some degree, as a waiting room for those who have not the time or inclination to go back to the main waiting room, which will immediately adjoin it at the rear. Upon this entrance vestibule, on the side opposite the entrance, will open four windows of the ticket office. At its end, to the left, will be the baggage counter and parcel room. At its right will descend a broad staircase, leading directly to the trains. There will also be an entrance to the men's smoking room from the entrance vestibule and it will contain space for telegraph office and news stand. The arrangement of the entrance vestibule has been made with the idea of saving the traveller as many unncessary steps as possible; he may transact all his business here, check his baggage, purchase his tickets, obtain his newspaper, check parcels and proceed directly to his train without traversing the main waiting room. If he arrives well ahead of train time and wishes to sit down for a while, he may cross the entrance vestibule to the main waiting room, which will be immediately behind it, and will be 50 x 80 ft. The beamed ceiling of this latter room will be supported by two reeded columns of novel design, the beams of the ceiling radiating from the column heads, forming a diamond pattern. Between the main waiting room and the entrance vestibule will be ticket offices, enclosed with terra cotta walls and ornamented with marble slabs and bronze grilles. In the main waiting room the seats will be of oak and of the latest model, and will be placed back to back, with a radiator between each pair. This will give an efficient heating system and at the same time all the radiators will be concealed. Along the tops of the seats will be lines of electric lights with reflectors.

At the left of the main waiting room will be the incoming baggage room, with an area of 2,100 sq. ft. As before stated, this room will have two large doors opening out on the wagon court, and at the extreme rear there will be a freight elevator, large enough to receive trucks, which will descend to the outgoing baggage room, immediately below, at the train level. There will be a staircase in the incoming baggage room, which will also lead down to the train level.

Opposite the incoming baggage room, at the right of the main waiting room, will be the men's smoking room and the women's waiting room, with lavatories between. Both of these rooms will have windows facing on St. Monique St. They will be good sized compartments, with seats arranged around the walls, the radiators being concealed in recesses behind the seats. There will be drinking fountains in the main waiting room, women's waiting room and the men's smoking room, to supply iced water.

From the men's smoking room will be doors leading to the entrance vestibule and to the staircase hall. This hall, at the right hand end of the entrance vestibule, will contain broad concrete stairs, leading to the train level, and a narrower staircase to the offices on the second floor. Descending the staircase, the passenger will arrive in the lower staircase hall, which in turn will open to the concourse. The concourse will contain approximately 3,500 sq. ft., and will be separated from the train room by iron railings, immediately inside of which will be the baggage runway, connecting to the outgoing baggage room at the left. The outgoing baggage room will be immediately below the incoming baggage room on the first floor, and will be of the same dimensions, and as previously stated, will be connected with it by a staircase and large freight elevator.

There are five tracks contemplated in the present construction. From the baggage runway, ramps with a grade of 5% will descend to the platform level.

To the right of the baggage runway will be the machinery and storage rooms, and here are to be installed the apparatus for heating the water supply to the lavatories and cooling the drinking water. The heating plant for the building is to be installed in a separate structure behind the outgoing baggage room.

Along the Lagauchetiere St. front, on the second floor level, will be approximately 4,000 sq. ft. of office space, which is to be subdivided later when its uses are determined. On this floor will be lavatories and other facilities required for the offices.

Additional illustrations are given on pages 258 and 259.

The Canadian Pacific Railway's Honor Roll.

List 23, issued June 21, brings the number of the company's officials and employes on active service shown in the casualty lists up to 1,210, of whom 370 have been killed and 840 wounded. As particulars of army reservists are not available, the lists of those who have given up their lives for their country or been wounded in action are necessarily incomplete and do not indicate fully the extent to which the company's officials and employes are participating in the great struggle. List 23 is as follows:—

Anderson, Frank, locomotive fireman, Moose Jaw, wounded; Armstrong, James W., clerk, Toronto, wounded.

Barton, William, helper, Angus, wounded; Baulch, Sydney, laborer, North Bay, wounded; Beach, Thomas, checker, Revelstoke, killed in action; Bennett, Stanley H., assistant accountant, Winnipeg, wounded; Bissell, Lloyd A., stenographer, Montreal, wounded; Blackwell, Henry, helper, Fort William, wounded; Bolton, Charles, waiter, Calgary, wounded; Bouvette, Wilfred S., messenger, Kelowna, wounded; Bradley, Reuben, clerk, Tillsonburg, wounded; Brindle, William Ernest, wiper, Souris, died of wounds; Bryant, Albert Quant, clerk, Calgary, died of wounds; Buckley, Frederick, checker, Moose Jaw, wounded; Burgess, Harold T., stenographer, Kettle Valley Ry., killed in action; Burton, Valentine F. B., ticket clerk, Regina, wounded.

Cameron, James, clerk, Calgary, wounded; Campbell, George W., conductor, Macleod, wounded; Campbell, Richard, machinist, Vancouver, killed in action; Campbell, William, operator, Shaunavon, wounded; Chandler, Richard, section foreman, Basswood, wounded; Childe, Percy K. G., clerk, Ogden, wounded; Clarke, Ernest George, cook, Toronto, wounded; Cohl, Robert, stripper, Ogden, wounded; Craig, Robert, wiper, Sutherland, killed in action; Currie, Thomas, tuber, Toronto, wounded.

Daly, Daniel David, yardman, Winnipeg, killed in action; Davis, Percy Frederick, cleaner, Ogden, wounded; Diggle, John, deckhand, British Columbia Lake Steamships, wounded; Duncan, Roderick C., clerk, Winnipeg, wounded; Dunlop, John, loader, Lethbridge, wounded.

Edmunds, William, porter, Fort William, wounded; Egerton, Herbert, painter, Montreal, wounded; English, Frederick R., yardman, Winnipeg, wounded and missing.

Forbes, John Hunter, resident engineer, Montreal, wounded; Forsythe, Louis, Loid, clerk, Toronto, shell shock.

Gate, John Millican, checker, Regina, wounded; Guest, Arthur J., wiper, Victoria, killed in action.

Hannaford, John Henry, helper, Lambton, wounded; Harrison, William, conductor, Cranbrook, wounded; Hawkins, Thomas, assistant baggagemaster, Medicine Hat, wounded; Hewson, Charles Ernest, helper, Lambton, killed in action; Horton, Joseph F., clerk, Angus, wounded; Hunter, Thomas, locomotive fireman, Brandon, wounded.

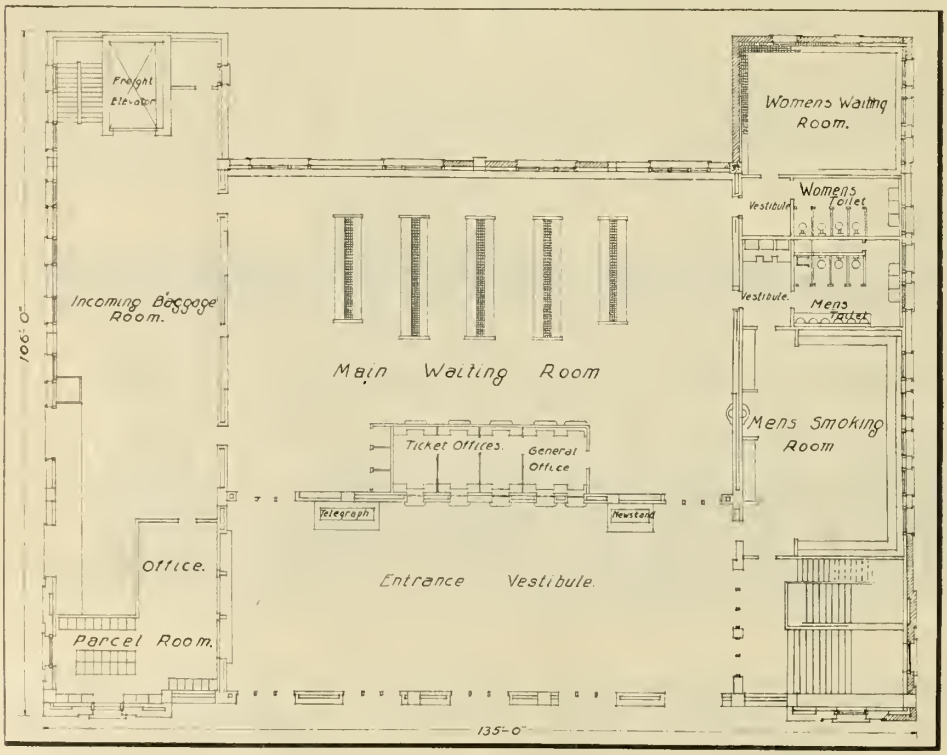
Inglis, Alexander, coal passer, Medicine Hat, killed in action.

Jerome, Victor, apprentice, Angus, wounded; Jones, Arthur Wyn, wiper, Moose Jaw, wounded.

Kidd, Alexander, constable, Montreal, wounded; Kirk, James, wiper, Medicine Hat, wounded.

Larsen, John, machine runner, Lethbridge, killed in action; Luck, Cecil George J., rodman, Weyburn, wounded; Lynch, John, electrician, Angus, killed in action.

McDonald, James A., wiper, West Calgary, shell shock; MacDougall, John, baggagemaster, Swift Current, killed in action; McKay, Christopher, locomotive fireman, Winnipeg, wounded; McKenzie, Roderick, wiper, Fort William, wounded; McNeil, James Milford, locomotive man, British Columbia Dist., killed in action.



Canadian Northern Railway Station, Waiting Room Floor, (See page 257).

Maguire, Lloyd Earl, switchman, Ottawa, wounded; Marshall, Henry, car inspector, Keewatin, wounded; Maybank, H. G., switchman, Winnipeg, believed killed; Millership, Wilfred E., locomotive fireman, East Calgary, wounded; Mole, William, carpenter, Macleod, killed in action; Montgomery, James D. L., clerk, Montreal, wounded; Morton, John, porter, Calgary, died of wounds; Munro, George Hossack, watchman, British Columbia Dist., wounded.

Nelson, George Charters, constable, Montreal, killed in action; Nesbitt, Fred Allen, wiper, Coquitlam, wounded.

O'Dell, William, yardman, Calgary, wounded; Orford, Arthur, waiter, Montreal, wounded.

Parsons, Herbert, helper, Winnipeg, wounded; Peacock, Archibald C., constable, Montreal, wounded; Peckham, John Henry, carpenter, Ogden, wounded; Phelps, Thomas, specialist, Angus, killed in action; Pitt, Thomas Reginald, assistant agent, North Transcona, wounded; Platt, Edwin, clerk, Winnipeg, killed in action; Potvin, Louis Victor, clerk, Outremont, presumed dead; Price, William, car foreman, Swift Current, wounded.

Raddish, Fred William, clerk, Victoria, wounded; Reid, Robert, locomotive man, British Columbia Dist., wounded; Robertson, Duncan D., clerk, Regina, killed in action; Rollo, Andrew, fitter, Angus, killed in action; Roy, Robert William, locomotive fireman, Medicine Hat, presumed dead.

Savage, John, wiper, Winnipeg, wounded; Seldon, Jack Prescott, stenographer, Montreal, wounded; Silcox, Harry Lowther, clerk, Paddington, wounded; Slipp, David M., trainman, New Brunswick Dist., shell shock; Somers, George, bridgeman, Medicine Hat, killed in action; Stanbury, Matthew, wiper, Golden, wounded; Stewardson, Ernest, clerk, Fort William, wounded; Surtees, Lawrence R., leverman, Winnipeg, wounded.

Treloar, Alexander R., stenographer, Montreal, wounded.

Walton, Barclay E., locomotive man, Winnipeg, wounded; Webster, Frank Trevor, switchman, Broadview, wounded; Webster, Robert, cleaner, Winnipeg, shell shock; Whitehead, John, cleaner, Moose Jaw, wounded; Willett, John, furnace operator, Angus, shell shock; Wilson, Robert Francis, yardman, Winnipeg, wounded; Wilson, William, porter, Calgary, wounded; Wooll, Henry Arthur, clerk, Montreal, believed killed; Wright, Alexander, clerk, Calgary, wounded.

Another list will be found on a later page in this issue.

Workmen's Compensation on Timiskaming and Northern Ontario Ry.—For the four months ended Apr. 30, 21 claims were registered, all for minor accidents. Of these, 8 were passed and paid, 9 were disallowed, and 4 were kept in abeyance. The total of claims paid was $473.08, and the insurance cost, for the period based on premium paid in 1915, would have been $5,995.52, or an average premium of $749.44, to protect an average award of $59.12.

A C.P.R. employment agent at Edmonton, Alta., made a contract with a number of foreigners to work on the line 40 miles from Wetaskiwin for five months. After working for some time the men left the job, but were arrested subsequently charged with a breach of the Masters and Servants Ordinance. The case was dismissed on the ground that the nature of the contract had not been definitely explained to the men.

Birthdays of Transportation Men in July.

Many happy returns of the day to:

A. A. Allen, Vice President, The Holden Co., Ltd., Montreal, formerly Master Mechanic, Timiskaming & Northern Ontario Ry., born at Grafton, Ont., July 7, 1870.

J. H. Black, ex-Superintendent, Timiskaming & Northern Ontario Ry., now at Toronto, born near Smiths Falls, Ont., July 8, 1874 .

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., born at St. Thomas de Montmagny, Que., July 25, 1877.

D'Alton C. Coleman, Assistant General Manager, Western Lines, C.P.R., Winnipeg, born at Carleton Place, Ont., July 9, 1879.

G. C. Conn, Freight Traffic Manager, Pere Marquette Ry., Detroit, Mich., born at Woburn, Mass., July 1, 1867.

D. D'E. Cooper, Canadian Freight Agent, Lehigh Valley Rd., Toronto, born at Buffalo, N.Y., July 8, 1862.

John Corbett, ex-General Foreign Freight Agent, C.P.R., Montreal, born in Lanarkshire, Scotland, July 19, 1863.

H. Darling, Locomotive Foreman, G.T. Pacific Ry., Smithers, B.C., born in Northumberland, Eng., July 27, 1873.

S. E. Dewey, General Eastern Freight Agent, G.T.R., New York, born at Beckenham, Kent, Eng., July 4, 1879.

A. H. Eager, Assistant Superintendent of Rolling Stock, Western Lines, Canadian Northern Ry., Winnipeg, born at Waterloo, Que., July 15, 1868.

F. C. Foy, Canadian Passenger Agent, New York Central Lines, Toronto, born there, July 5, 1881.

C. W. Johnston, Assistant General Passenger Agent, G.T.R., Montreal, born at Actonvale, Que., July 27, 1879.

M. Kelly, Resident Engineer, Farnham Division, Quebec District, C.P.R., Farnham, born at Thamesville, Ont., July 6, 1874.

A. E. Lock, Superintendent Car Service, Toronto. Hamilton & Buffalo Ry., Hamilton, Ont., born at Albany, N.Y., July 14, 1879.

G. A. McNicholl, Assistant General Freight and Passenger Agent, Grand Trunk Pacific Ry., Prince Rupert, B.C., born at Montreal, July 31, 1876.

H. D. Mackenzie, Master Mechanic, Canadian Government Railways, Edmundston, N.B., born at Churchville, N.S., July 22, 1864.

J. M. Macrae, District Freight Agent, Canadian Northern Ry., Saskatoon, Sask., born at Stornoway, Scotland, July 31, 1884.

T. J. Maguire, Accountant, Quebec Central Ry., Sherbrooke, Que., born at Quebec, July 31, 1860.

W. G. Manders, General Freight Agent, Western Lines, Canadian Northern Ry., Winnipeg, born at Owen Sound, Ont., July 24, 1876.

J. E. Morazain, Superintendent, District 1, Intercolonial Division, Canadian Government Railways, Levis, Que., born at Wheatland, Que., July 31, 1875.

R. E. Perry, Assistant General Freight Agent, Canadian Government Railways, Moncton, N.B., born at Drayton, Ont., July 5, 1876.

R. Preston, Assistant Superintendent of Motive Power, Western Lines, C.P.R., Winnipeg, born at Toronto, July 28, 1863.

J. E. Quick, General Baggage Agent, G.T.R., Toronto, born at Richmond, Ontario Co., N.Y., July 10, 1851.

G. G. Ruel, Chief Solicitor, Canadian Northern Ry., Toronto, born at St. John, N.B., July 5, 1866.

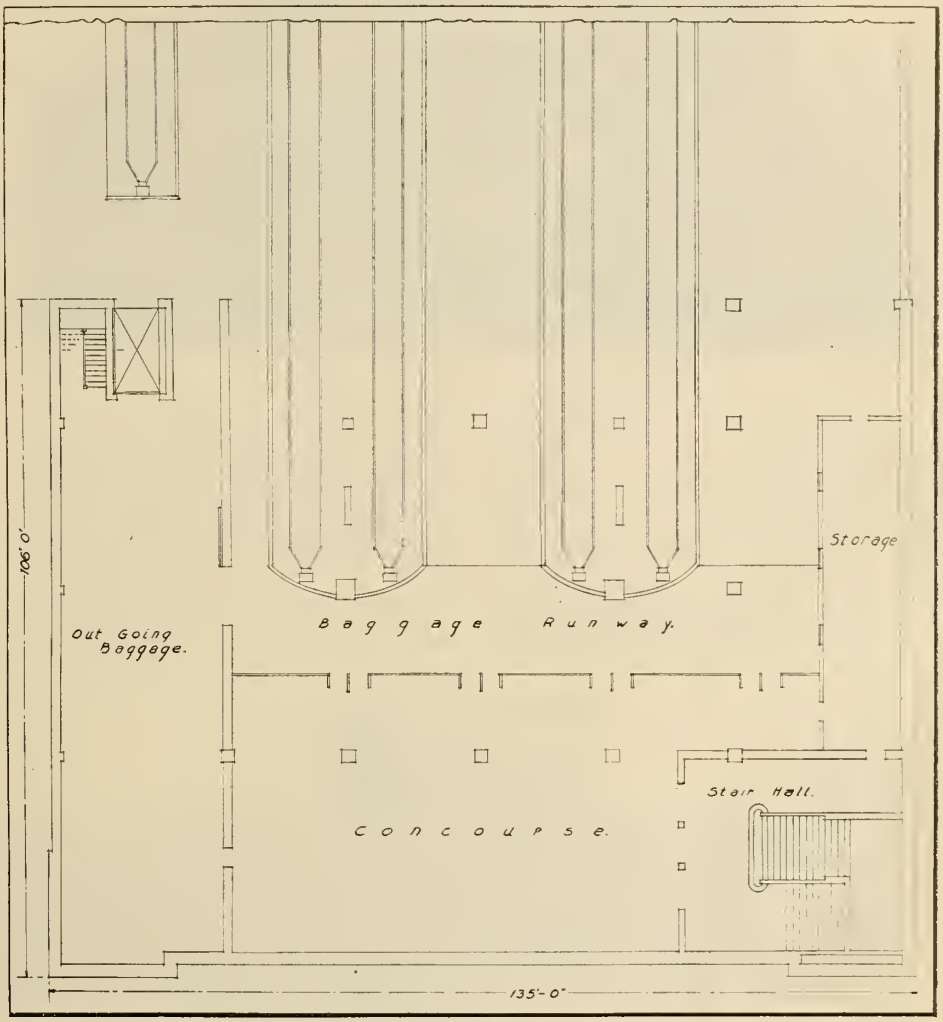
George Stephen, Freight Traffic Manager, Western Lines, Canadian Northern Ry., Winnipeg, born at Montreal, July 5, 1876.

Sir Thos. Tait, President, Fredericton & Grand Lake Ry. & Coal Co., Montreal, born at Melbourne, Que., July 24, 1864.

G. A. Walton, General Passenger Agent, Western Lines, C.P.R., Winnipeg, born at Montreal, July 17, 1881.

The Joliette and Lake Manuan Colonization Ry. Co's Difficulties.

The Board of Railway Commissioners, under authority of secs. 26 and 27 of the Exchequer Court Act, made an order April 4, directing the sale of this railway's rolling stock, equipment and other accessories. The company was incorporated by the Dominion Parliament in 1903, power being given to build a railway from Joliette to Lake Manuan. Extensions of time for construction were granted from time to time, and in 1911 the company was authorized to extend its line southerly from Joliette into Montreal and northerly from Lake Manuan to a junction with the National Transcontinental Ry. During 1911 and 1912 there was considerable rivalry between the promoters of this company and those interested in the North Ry. as to which had the most favorable route for securing in connection between Montreal and the N. T. R. Both companies secured promises of aid from the Dominion Parliament and the Quebec Legislature, and in 1912, A. M. Laredo obtained control of the J. and L. M. C. Ry. The first 30 miles of the line from Joliette was located in June, 1912, and a contract was let to R. J. Craig, Cornwall, Ont., for the grading, the general work of construction being financed by the British Canadian Construction Co. No very large amount of work appears to have been done, and the project for construction seems to have fallen through, after the Dominion Government in 1914 purchased the rights of the North Ry. to build from Montreal to the N. T. Ry. via the Bell River Valley. The company evidently is in financial difficulties, the Merchants Bank having obtained judgment against it for $9,925.-81 with costs of $182.90. Failing to secure a settlement of this judgment the bank applied for the order for the sale of the property.



Canadian Northern Railway Station, Montreal, Train Floor (See page 257).

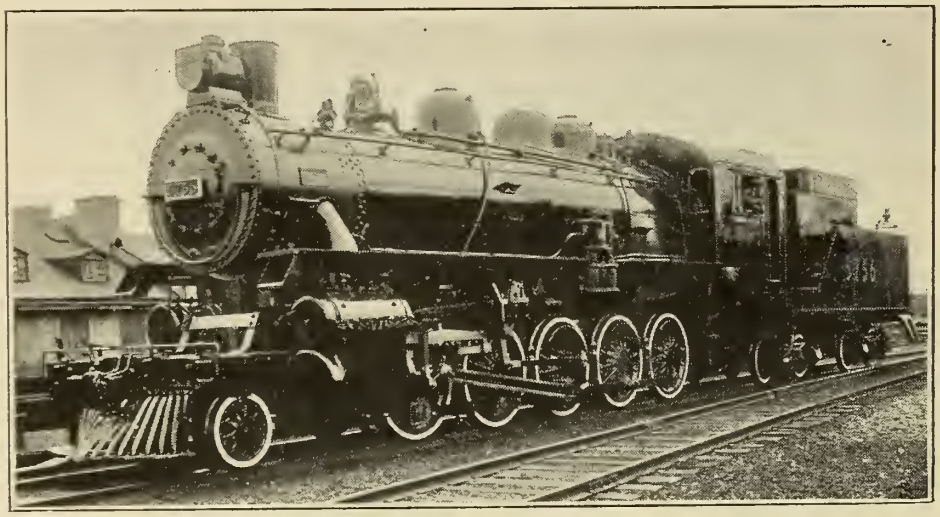
Canadian Northern Ry. Employes in a largely signed petition to Premier Borden, have protested in the strongest terms possible against the putting into effect of the majority report of the royal commission, which investigated the Canadian railway situation recently. The report recommended among other things the nationalization of the C. N. R.

The Toronto Terminal Warehouse Co., Ltd., has been incorporated under the Ontario Companies Act, with $150,000 capital and office at Toronto, to carry on the business of general warehousemen and forwarders in all its branches.

Decapod Locomotives for Canadian Pacific Railway.

The C.P.R., as previously announced in Canadian Railway and Marine World, is building 25 decapod locomotives at its Angus shops, Montreal, for mountain service. The principal general dimensions are as follows:

Capacity	275%
Boiler pressure	200 lb.
Cylinders	24 x 32 in.
Pulling face, rear tender coupler over pilot	76 ft. 10⅜ in.

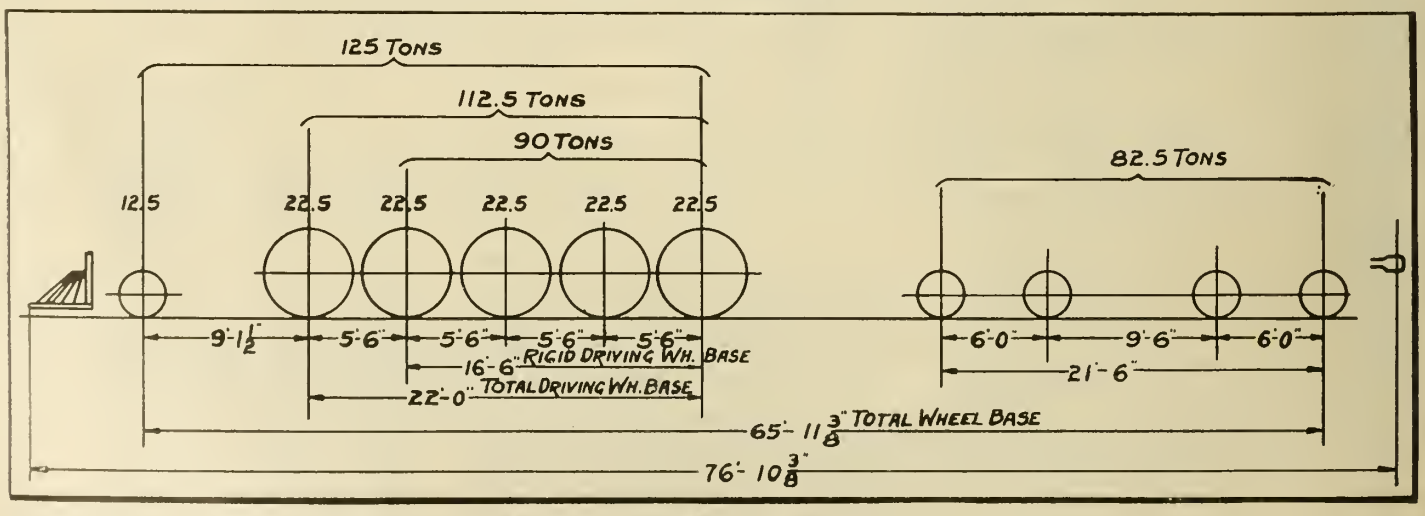


Decapod Locomotive, Canadian Pacific Railway.

Total wheel base	65 ft. 11⅜ in.
Driving wheel base	22 ft.
Rigid driving wheel base	16 ft. 6 in.
Diameter of drivers	58 in.
Weight on drivers	112.5 tons
Weight on rigid drivers	90 tons
Total weight	120 tons
Total weight, engine and tender	210 tons
Tender water capacity	7,000 imp. gal.
Tender oil capacity	3,200 imp. gal.
Superheater	Locomotive Superheater Co.

One of the most noticeable features about these locomotives is the provisions which are made in the cab for the comfort and safety of the locomotive man and fireman. This is especially required on a mountain division on account of the severe climatic conditions which sometimes prevail. The cab is roomy and well ventilated and is heated in winter by having part of the insulation which covers the boiler in the cab made in sections which can be easily removed. The seats are exceptionally well cushioned and a coat cupboard is provided with swinging pegs for the surplus clothing. The windows are double sashed and a wind deflector is provided for the locomotive man while the fireman's eyes are protected by a deflector on the firedoor which eliminates the glare. A deflector is also located on the cab roof, which stops the back dust draught and keeps the cab free from dust. A safety clamp is carried to prevent the tender from sliding forward on to cab in case of a collision.

The Laird crosshead, an old type revived, has been used because it ensures excellent lubrication and is easy to maintain. The leading driving wheels are provided with a flexible arrangement so that a lateral displacement may take place on curves. This reduces the wheel space of the engine to 16½ ft., which is practically the same as used on locomotives with only one leading pair of driving wheels. To accomplish this the leading side rods are articulated by means of a ball joint. A power reverse gear operated by air is also an improvement. The main object achieved in the construction of these locomotives, is maximum power for minimum weight.



Decapod Locomotive, Canadian Pacific Railway.

The Colchester Coal and Ry. Co. has leased its Debert coal areas to another Nova Scotia concern for three years, on a royalty basis.

Increases in the Cost of Railway Supplies.

E. J. Chamberlin, President G.T.R. and Grand Trunk Pacific Ry., has issued the following circular to officers and employes.—On April 15, 1916, I issued a circular to officers and employes, calling attention to the abnormal increase in the cost of the principal materials and supplies used by these railways as compared with the prices ruling in 1914 before the outbreak of war. I have now had this statement revised showing the prices prevailing in April, 1917, from which it will be noted that practically all of the items shown have still further increased in cost, with no indication as yet that they have reached their maximum. The matter is again brought to your attention, so that you may be informed as to the constantly increasing expense to which the company is put, and further, that you may keep your requisitions for materials and supplies down to the lowest point possible during the present abnormal market conditions. The prices that prevail necessitate partial repairs to structures and facilities rather than general renewals, and in so far as possible, the deferring of new or improvement work until conditions are again normal. This, of course, does not apply to repairs or renewals which are absolutely necessary for the safety of the public and the employes."

The following table shows the increases in cost of material in April, 1917, over July, 1914:

	United States %	Canada %
Acids	—	73
Antimony	386	290
Batteries and renewals	20	27½
Bolts, machine and carriage	150	123
Bolts, track	149	—
Brake beams	86	120
Brass, rod	210	217½
Brass, sheet	221	228½
Brushes	10	17½
Castings, brass	115	124
Castings, malleable	142	223
Castings, steel	149	119
Cement	36	40
Chain	83	122
Copper, rod	147	154½
Copper, sheet	147	154½
Copper, ingot	107	114½
Couplers, car and locomotive	126	134
Draft gear	55	55
Drills, carbon	80	59
Drills, high speed	160	167½
Duck cotton	71	52
Fence wire	80	117
Ferrules, copper	107	114½
Files	80	80
Frogs and switches	89	96½
Fusees	140	137
Gasoline	—	58
Glass	50	90

Hose	29	21
Iron, common bar	146	103
Iron, black sheet	337	344½
Iron, galvanized	255	262½
Joints, rail	65	72½
Knuckles, car and locomotive	67	67
Lead, pig	150	157½
Leather, belting	110	66
Lumber, oak, car, engine	30	30
Lumber, yellow pine	30	30
Metal babbitt	45	100
Nails, wire	110	156
Netting, locomotve stack	62	140
Nuts, hexagon	119	287
Nuts, square	90	270
Paint, white lead in oil	55	79
Pipe, black	118	180
Pipe, cast iron	144	97
Pipe, galvanized	44	115
Potash, prussiate	600	862
Rings, packing and piston	54	53
Rivets, boiler	171	114
Roofs, car metal	50	57½
Roofs, plastic	50	57½
Rope, Manilla	111	97
Screws, brass wood	308	260
Screws, iron	121	157
Scoops, shovels	29	61
Spikes, track	155	—
Springs, car and locomotive	183	177
Stationery	88	100
Stationery, printed matter	25	25
Steel bars	200	147
Steel billets	317	324½
Steel firebox plates	285	202½
Steel plates, angles, etc.	300	307½
Steel tool, high speed	400	407½
Tie plates	110	117½
Tin	54	61½
Tires	170	295
Tubes, boiler	147	154½
Tubes, superheater	119	126½
Tubing, copper	135	142½
Valves	94	67
Vitriol, bluestone	—	120
Washers, wrought	60	95
Waste, cotton and wool	44	51
Wheels	77	84½
Zincs, battery	—	131
Stationery Items.		
Blotting papers	100	100
Copying pencils	140	160
Inks	80	80
Paper fasteners	100	200

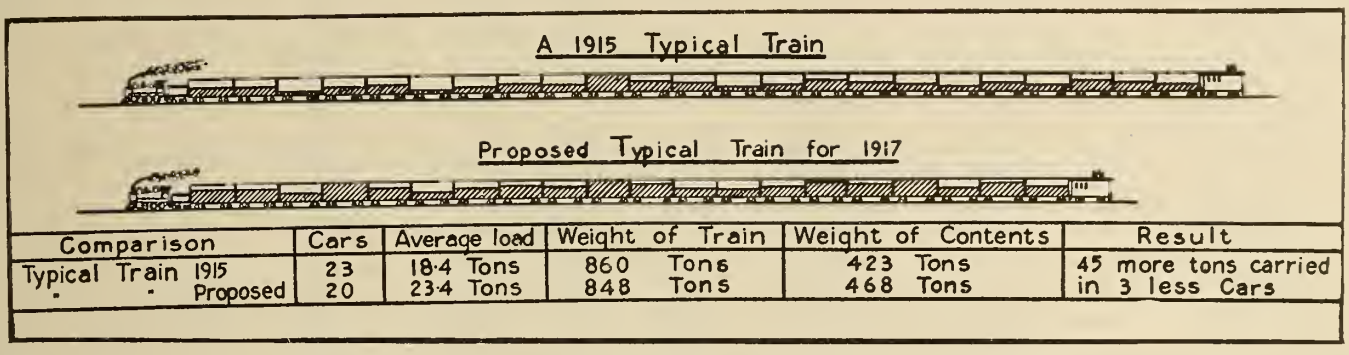
The Canadian Northern Ry. carried 706,414 tons of coal from Alberta coal mines for the year ended April 30, against 476,718 for the year ended April 30, 1916.

Reduce Car Shortage by Filling Cars.

Following up the bulletin published in Canadian Railway and Marine World for May the management of the Eastern Lines, C.P.R., has issued the following bulletin, under the above heading:

The object in issuing these bulletins is not to start a controversy with the public, not to shift responsibility to the public but to secure the co-operation of the public. Bulletin 1 contained the following information for the period from 1907 to 1915:

The freight carried on Canadian railways increased	51%
The number of cars increased	91%
The total car capacity increased	131%
The average capacity of cars increased	5.8 tons
The average weight of contents increased	3.0 tons



Comparison	Cars	Average load	Weight of Train	Weight of Contents	Result
Typical Train 1915	23	18·4 Tons	860 Tons	423 Tons	45 more tons carried in 3 less Cars
" " Proposed	20	23·4 Tons	848 Tons	468 Tons	

The present heavy volume of traffic will no doubt continue so long as the war lasts. Additional cars and locomotives are needed, but they cannot be secured in large numbers for many months. There is also a serious shortage of labor and in some places of yard trackage. The only way to improve the conditions therefore is to secure greater efficiency in the present equipment, terminal trackage, and man power. The railways alone cannot develop the maximum efficiency; the railways and the public co-operating can. Consignees can help by ordering full car loads instead of minima authorized in the tariffs and classifications, and consignors can help by loading cars to their full authorized cubical or carrying capacity.

A comparison—	The average train 1915	Proposed for 1917
Average weight of contents of cars	18.4 tons	23.4 tons
Total weight of cars	503 "	448 "
Total weight of contents	344 "	399 "
Total weight of train	847 "	847 "

Had the average load per car in 1915 been 23.4 tons, instead of 18.4, the same traffic would have been handled with: 6,947,588 less trains hauled one mile, 1,568,765 less car trips, 29,806,535 less tons of dead car tare hauled one mile.

By increasing now the average load by 5 tons per car the public would improve the efficiency of the equipment, facilities, and man power of the railways to an extent equal to: 54,800 additional freight cars, 482 additional freight and yard locomotives, 415 additional miles of yard trackage and 13.5 % increase in man power employed in train and yard service. A car saved is a car gained.

Periscopes in C. P. R. Interlocking Towers.

The C.P.R. has had periscopes installed in its interlocking signal towers at Mile End, Montreal, and at Iberville Jct., on the Montreal-St. John, N.B., line, 30.6 miles east of Montreal, to enable the signal men to get views of portions of the track adjacent to the interlocking limits, which are obscured by buildings in the direct line of vision. The periscope is located at a window opening, and the mirrors, one at the top and one at the bottom of the upright tube, are adjustable, the adjustment of the bottom mirror being convenient to enable signalmen, when either sitting or standing, to obtain the view. The apparatus was built and installed at each place by the company's own forces. The accompanying illustration shows the periscope installed on the interlocking signal tower controlling the various main line tracks and sidings at Mile End, Montreal, by means of which the signalmen are enabled to see trains coming up the grade long before they could do so without it.

Periscope on Signal Tower, C.P.R., Mile End, Montreal.

Vancouver Transportation Club.—J. A. Cunningham, in addressing the club on June 1, urged the development of the natural resources of the province as being necessary to make the railways pay.

Steam Railway Statistics for Year Ended June 30, 1916.

Name of Railway	Passengers carried	Passengers carried one mile	Revenue per passenger per mile, cents.	Mileage of revenue passenger trains	Mileage of revenue mixed trains	Mileage revenue freight	Tons of freight carried	Tons carried one mile	Revenue per ton per mile, cents.	Mileage of non revenue trains
Algoma Central & Hudson Bay	27,081	1,500,367	3.382	29,077	50,131	167,466	736,658	54,681,535	0.812	54,144
Algoma Eastern	88,658	1,915,774	2.664	56,297	.....	88,800	1,629,114	22,635,256	1.785	2,210
Atlantic, Quebec and Western	36,025	1,090,029	2.945	43,976	20,165	40,909	115,818	5,963,928	1.160	2,821
Brandon Sask. & Hudson Bay	21,053	830,574	2.598	37,557	.....	19,235	49,080	2,059,883	0.955	11,812
British Yukon	7,841	523,147	7.967	1,427	38,248	6,190	37,234	3,165 401	6.947	1,565
Canada and Gulf Terminal	25,187	512,670	3.242	432	22,844	52	32,563	933,678	3.115	216
Canada Southern	1,409,877	122,204,928	2.386	1,833,017	149,272	1,659,125	8,024,485	1,210,431,611	0.644	41,855
CanadianGovernment Railway										
Intercolonial	4,305,441	240,023,633	1.667	3,050,173	359,912	5,016,440	6,182,949	1,800,688,658	0.559	151,210
Prince Edward Island	424,167	1,070,387	1.747	151,581	214,499	.....	116,856	4,706,798	3.849	20,848
National Transcontinental	547,613	37,066,514	1.673	462,290	476,706	1,951,797	2,644,943	1,030,056,961	0.485	59,526
Canadian Northern	9,384,056	254,555,428	2.142	5,589,166	2,916,870	8,517,056	13,353,380	3,851,918,945	0.679	988,979
Canadian Pacific	13 727,219	1,247,118,119	1.957	18,159,545	2,098,825	25,355,997	29,276,872	12,822,500,920	0.641	856,680
Cape Breton	8,711	197,699	3.096	.....	91,530	.....	14,848	232,643	3.563	.....
Caraquet and Gulf Shore	19,630	808,922	2.830	41,600	.....	.....	44,413	1,820,933	2.910	.....
Crows Nest Southern	9,997	262,694	3.496	32,199	.....	47,892	216,016	13,310,395	0.753	6,428
Cumberland Ry. and Coal Co.	52,546	576,531	2.551	.....	29,421	11,506	364,609	3,327,709	2.037	.....
Central Vermont	364,423	4,943,013	2.397	147,436	29,734	74,691	480,146	18,816,323	1.038	3,624
Dominion Atlantic	456,550	16,617,848	2.247	288,940	182,196	63,361	344,907	22,439,238	2.262	20,387
Eastern British Columbia	2,875	24,856	5.569	120	7,604	.....	99,585	836,791	3.402	1,344
Edmonton, Dunvegan and B.C.	35,751	3,966,695	3.841	55,898	28,050	61,511	167,130	24,389,971	1.028	.....
Elgin and Havelock	10,112	90,041	3.210	.....	16,200	.....	15,860	.....	.....	.....
Essex Terminal	.....	.....	.....	.....	24,000	.....	264,442	1,332,210	5.155	.....
Esquimalt and Nanaimo	253,535	6,018,989	2.858	149,329	3,960	90,687	362,478	11,138,672	2.771	8,073
Fredericton and Grand Lake	9,757	241,202	2.813	.....	25,041	.....	109,663	3,559,877	1.729	.....
Grand Trunk	11,967,745	572,058,443	1.794	8,279,329	791,169	11,158,448	19,060,802	3,768,625,542	0.660	393,239
Grand Trunk Pacific	369,495	49,610,894	2.084	994,074	52,188	1,736,045	1,972,054	714,572,028	0.698	295,069
Hereford	30,550	576,012	2.936	33,608	33,231	1,422	109,781	2,637,789	2.884	1,198
International Ry. of N. B.	35,420	1,363,260	2.871	596	69,902	980	95,079	3,945,543	1.884	4,446
Kettle Valley	21,556	1,336,028	3.339	673	100,070	84,759	207,110	15,225,702	1.778	9,820
Lotbiniere and Megantic	14,092	196,724	2.870	.....	18,840	1,000	57,860	811,197	3.520	800
Maine Central	88,383	450,753	2.360	3,940	6,255	3,600	239,994	450,753	0.538	75
Manitoba Great Northern	9,617	214,788	2.702	10,020	23,485	7,227	106,761	5,225,192	0.592	1,418
Maritime Coal Ry.& Power Co.	23,334	232,294	2.902	.....	32,130	.....	282,076	3,072,073	2.679	.....
Massawippi Valley	154,941	2,447,102	2.643	91,882	8,540	61,980	581,842	17,024,993	0.892	4,202
Midland Ry. of Manitoba	64,833	3,931,428	2.234	116,168	268	46,967	170,619	12,190,669	0.956	136
Moncton and Buctouche	280,050	605,868	2.220	2,282	17,972	5,600	21,141	448,803	4.235	640
Montreal and Atlantic	316,519	7,427,296	2.413	157,069	117,904	270,094	1,724,143	92,722,006	1.128	5,024
Morrissey Fernie and Michel	119,500	728,950	1.562	.....	32,407	.....	655,438	3,398,172	2.546	.....
Napierville Jct.	22,840	384,245	2.682	10,055	11,118	22,272	557,029	15,856,348	0.741	27
Nelson and Fort Sheppard	18,707	498,394	3.218	37,020	.....	18,585	30,774	1,066,936	1.994	3,034
New Brunswick Coal & Ry. Co	19,107	444,170	2.825	.....	36,947	.....	44,898	923,421	3.174	.....
New Brunswick and P. E. I.	15,966	298,205	2.596	812	18,934	13,565	61,309	1,467,254	2.189	1,527
New Westminster Southern	9,751	96,385	3.257	.....	21,304	.....	80,650	615,623	4.342	.....
Ottawa and New York	135,586	3,409,087	2.295	78,450	.....	61,590	464,345	24,204,683	0.625	.....
Pere Marquette	297,627	5,764,639	2.311	268,952	.....	890,584	2,841,354	485,025,339	0.575	17,921
Quebec Central	412,808	17,768,648	2.129	233.391	269,676	194,447	999,155	77,526,894	1.345	25,830
Quebec Montreal and Southern	244,659	5,359,898	2.569	125,524	85,722	80,211	355,457	15,769,531	1.435	233,684
Quebec Oriental	32,219	1,758,963	2.569	43,393	19,019	41,543	81,482	6,439,056	1.339	770
Quebec Ry. Light & Power Co.	75,926	588,425	1.370	7,620	.....	22,906	227,330	1,479,852	5.286	2,223
Red Mountain	9,271	83,270	2.632	.....	8,302	1,922	25,685	231,753	3.790	2,343
Roberval–Saguenay	23,805	339,367	2.603	82,333	263,825	.....	212,327	6,806,326	1.365	756
Rutland and Noyan	111,893	379,371	2.298	4,997	.....	2,070	147,304	434,527	1.372	.....
St. Lawrence and Adirondack	610,427	12,254,775	1.642	171,422	.....	93,080	1,146,281	41,539,713	1.215	.....
Salisbury and Albert	13,328	332,595	2.780	.....	30,620	.....	43,687	1,013,164	2.740	10,535
St. John and Quebec	46,892	1,251,797	2.271	648	69,878	440	44,744	1,782,109	2.266	.....
St. Martins	8,580	163,946	2.508	.....	16,500	.....	19,268	275,969	5.736	6,669
Sydney and Louisburg	160,296	2,206,128	2.329	27 132	18,850	197,034	4,922,460	76,066,854	1.016	.....
Temiscouata	71,963	1,979,473	2.543	73,220	70,216	3,399	159,958	6,030,007	2.641	.....
Timiskaming and N. Ontario	472,839	25,156,422	2.206	473,626	59,443	507,573	902,821	169,956,097	0.745	9,752
Thousand Islands	49,071	294,426	2.999	.....	87,373	.....	32,825	197,190	10.785	51,223
Toronto, Hamilton and Buffalo	612,447	18,001,397	2.183	304,190	.....	144,473	2,297.240	84,256,344	1.271	.....
Vancouver, Victoria & Eastern	142,613	3,752,621	2.785	128,137	75,657	79,623	1,232,323	32,640,410	1.107	3,378
Victoria Terminal Ry., and Ferry Co.	47,959	47,479	2.755	2,002	21	590	16,869	16,700	5.321	16,699
Victoria and Sidney	50,987	573,540	2.850	33,339	336	9,500	20,203	246,849	4.957	.....
Wabash (in Canada)	565,200	31,594,156	1.193	524,118	.....	1,101,351	2,695,891	598,596,519	0.499	4,034
York and Carleton	7,461	.....	.....	.....	7,112	.....	5,994	.....	.....	.....
Total	49,027,671	2,727,122,648	.....	42,449,022	8,499,073	60,036,984	109,659,088	28,195,364,264	.....	3,338,181

Notes to Steam Railway Statistics.

The table in Canadian Railway and Marine World for June showed the financial results of the operation of steam railways for the year ended June 30, 1916. It has been our practice for a number of years to follow this with a second table of operating statistics, but owing to changes in the form of tables used by the Railways Department in its statistical report it is impossible to give our second table in the same form as it has appeared since 1910. The following columns contained in the department's report up to June 30, 1915, are omitted in the report to June 30, 1916: Ratio of operating expenses to operating revenue; proportion of total passenger train revenue to total earnings; proportion of freight plus switching revenue to total earnings; earnings per train mile; passenger earnings per train mile; and freight earnings per train mile. In the table on another page the revenue per passenger per mile, and the revenue per ton per mile are given in place of the passenger and freight earnings per train mile respectively. The other change is that instead of the total revenue train

mileage being given in one column, three columns are given showing passenger, mixed and freight train mileage respectively. To ascertain the revenue per passenger per mile, the actual passenger receipts, as given in our June table, are divided by the total of the passenger and mixed train mileage; and to ascertain the freight revenue per ton per mile, the freight earnings, as given in our June issue, are divided by the total of the mixed and freight train mileage. The non-revenue train mileage in the last column has nothing to do with calculating the revenue per mile. passenger or ton.

The Mechanics of the Chilled Iron Wheel.

"Tell me," said a business man, "why it is that steel has supplanted iron in the rail, wood in the car, and multitudinous parts of the car and track structure, and has never succeeded in making appreciable inroads on the chilled iron wheel?" The reply was that the material known as chilled iron has been found by continuous use for 67 years to be the best adapted for the service, and its superiority is not entirely because of scientific processes which have been used in making the wheel, but principally because of the material. Chilled iron has remained in the forefront ever since its introduction in 1850, and is today the main factor in America's commerce, and this is because it possesses inherent qualities which are not found in other metals and its principal characteristics are its ability to carry any load without crushing or flowing, that can be supported by the steel rail.

The mechanics of the chilled wheel have never been investigated except in a very superficial way. The fundamental properties of chilled iron, such as specific gravity, modulus of elasticity for varying tensile strengths, action under repeated stresses, relation of operating conditions to temperature stresses, etc., are not established. Dollars are spent in the investigation of steel, cents are devoted to chilled iron. In the face of this neglect, the chilled iron wheel by sheer merit survives the struggle for existence. A belated pause to consider the basis for this vitality will not be wasted. If the properties of chilled iron were fully understood and properly used in the wheel, a large return on the meagre expenditure for investigation would flow in upon the manufacturers in the way of increased profits and to the railroads in the way of reduced costs.

Its economic importance can be realized when it is borne in mind that there are 25,000,000 such wheels in service, representing 5,000,000 tons of metal, requiring an annual production of 3,000,000 wheels, or approximately 1,000,000 tons of chilled iron, to replace those worn out in service. It is not intended to dwell upon the economic phase of the subject, for this is fully established, but rather to offer a few suggestions that will ultimately lead to a more intelligent design and classification of wheels for the service which they are to perform. Since 1875, wheel loads have increased 500%, axle weights 230%, and wheel weights 75%. The 11,000 lb. wheel load, under the 30 ton car, was supposed, at the time of its introduction, to be the maximum that could be carried without breaking down the surface metal of the wheel tread and the top rail. This opinion, however, did not long impede the growth in wheel loads, for soon the 50 ton car was introduced with 20,000 lb. concentrated on one wheel. It was considered that this was the limit in car capacity and that the chilled iron wheel might not be fully satisfactory under this burden. Again this opinion is exploded, not only by the successful performance under a half million 50 ton cars, but the chilled iron wheel has passed the experimental stage under the 70 ton car, with a wheel load of 25,000 lb. The latest increase is the experimental 85 ton car and 12,000 gal. capacity locomotive tender, requiring an axle having a 8½ x 12 in. journal, and 8⅛ in. wheel fit, designed to carry 60,000 lb., or 30,000 lb. a wheel. It is a matter of interest to note that in 1890 30 tons was considered the maximum car capacity. We now have a single axle of 30 tons capacity, or 30,000 lb. a wheel, which shows the marvellous increase in wheel burden.

Chilled iron wheels have been in service for the past five years, without structural failure, on axles having ⅛ in. wheel fit, under ore cars, and in constant service on 2% grades. The question now arises—are we nearing the limit for wheel loads? If so, what is the determining factor? What margin still remains for further increases in bearing power of the metal of wheel and rail; in flange strength; in web and hub? These are the questions it is proposed to answer by considering each part of the wheel separately.

The bearing power of iron or steel is largely controlled by the carbon content, and, naturally, since the tread of the cast iron wheel contains 3½% of carbon, it has a much greater bearing power than the rail which contains less than 1% of carbon. A 33 in. chilled iron wheel will not perceptibly flatten under a load of 250,000 lb., which is 8 or 10 times the present maximum wheel load. Chilled iron wheels are in common use, carrying 100,000 lb. or more, under large cranes, "unloading bridges, transfer tables, hydraulic locks, etc. To carry these loads wide special flat top rails are necessary. The ordinary railway rail with a 12 in. top radius, will develop a permanent set when the indentation of the wheel into the rail amounts to 0.007 in. If we assume that the maximum load carried in rapidly moving service should not cause, when at rest, an indentation greater than half this amount, the limiting loads from the rail standpoint are readily calculated by the formula—$L = 1{,}500{,}00\ d\sqrt{D}$ in which L equals load, d equals indentation into rail, and D equals diameter of wheels. In this formula the pressure per sq. in. over the area of contact between wheel and rail is taken at 100,000 lb. a sq. in. The limiting loads for various diameters on wheels are: 42 in. wheels, 34,000 lb.; 36 in. wheels, 31,300 lb.; 33 in. wheels, 30,200 lb.; 30 in. wheels, 28,800 lb. As far as the bearing power of chilled iron is concerned, there is no indication of nearing the wheel load limit.

The pressure which the flange must resist, in guiding the truck around curves, is equal to ¾% of the wheel load, provided the track is perfect and cars in good condition. The pressure is not influenced by degree of curve, velocity, centrifugal force, or obliquity of traction, but an allowance must be made for impacts originating from irregularities in track and locked side bearings and centre plates, which, added to the curve pressure, will make the total maximum lateral pressure against the flange 1 1-3 times the wheel load, or 18,000 lb. for the 30 ton car and 46,500 lb. for the 85 ton car. It is unreasonable to suppose that a flange designed for 18,000 lb. pressure will have the same factor of safety for 46,500 lb. pressure, in fact, the thickness of flange was developed when flange pressure did not exceed 8,000 lb. It is just as necessary to increase the flange section as to increase all other sections of the wheel, when increased duty is imposed, and notwithstanding the fact that the Master Car Builders' Association, in its latest report, stated that no increased flange width was necessary, this matter is by no means settled, as far as other associations are concerned, and a movement is again started to determine whether the hundreds of thousands of flanges that are now in use, which are wider than the present M.C.B. standard flange, are not entirely in harmony with present track standards. When this question is answered, and the question of track clearance ought to have been answered long ago, we will then have an opportunity to present to the Master Car Builders' Association a flange with a factor of safety proportional to the load carried, which is not a difficult proposition, and which from an engineering standpoint is demanded.

Stresses within the plate or web.—The University of Illinois has undertaken a thorough analysis of the properties of chilled iron and of the stresses within the wheel, originating from all conditions that can arise in service, as far as they can be duplicated in the laboratory. These include specific gravity, coefficient of expansion by heat, modulus of elasticity, tensile and compressive strengths, stresses in the wheel originating from pressure on the axle, from vertical load, from side pressure on the flange, from difference in temperature between tread and plate; also to discover the probable difference in temperature between tread and plate for continuous application of various shoe pressures at various velocities. An indication of the magnitude of these stresses already has been determined, as follows: From pressing on an axle having a 7 in. wheel fit at 60 tons pressure, 18,000 lb. compression per sq. in. is developed in the single plate; the greatest tensile stress is in the hub. If the machine work is fairly well done these stresses are symmetrical, but if irregularly machined the stresses will be bunched and necessarily greater than normal, at times sufficient to burst the hub. Under vertical load of 300,000 lb. the maximum compressive stress occurs on the radial line between rail and hub, amounting to about 18,000 lb in the 725 lb. M.C.B. wheel; the tensile stresses in the tangential direction are about 12,000 lb. These stresses alternate at each revolution of the wheel. The maximum stresses are in the front plate. In the back plate the load stresses are practically nil.

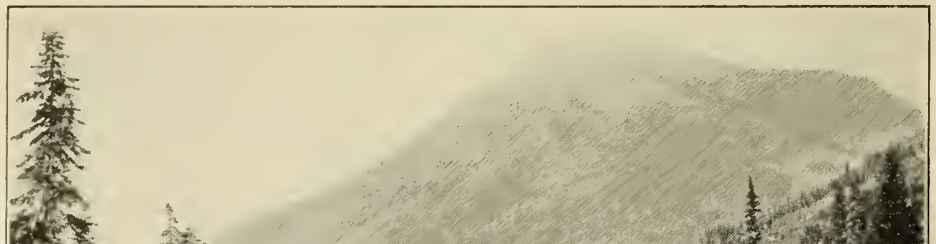
The stresses from vertical load within the limits of railway practice are practically negligible. The greatest stresses, and therefore the most important, are the temperature stresses; for example, a 625 lb. wheel was placed in a brake shoe testing machine and operated at various velocities under a continuous shoe pres-

sure of 1,500 lb. This corresponds to the retardation required for a 50 ton car on a 3% grade, when operated at 5 miles an hour, and on a 2% grade, when operated at 50 miles an hour. Thermo couples were placed ½ in. under the surface of the tread, under the rim, at the plate intersection, and in the hub. These couples were connected by brushes to a collector ring insulated from the axle, so that temperatures could be taken from any part of the wheel at any time without stopping the machine. After running the equivalent of 25 miles the maximum stresses developed near the intersection of plates was found to be at

5	miles an hour	19,000	lb. per	sq. in.
10	miles an hour	18,000	lb. per	sq. in.
20	miles an hour	15,000	lb. per	sq. in.
30	miles an hour	18,000	lb. per	sq. in.
40	miles an hour	21,000	lb. per	sq. in.
50	miles an hour	24,000	lb. per	sq. in.

Since the above is a greater retardation than is required for controlling 30 ton cars, it is evident that if the shoe pressure could be made uniform on all wheels of the train there would be no overheating of wheels, but there are so many opportunities of irregularities in service that at least 200% above the theoretical retardation required must be taken into consideration when designing wheels. The test also indicates the great benefit of thermal or cooling stations. When complete data are worked out for each weight of wheel and the information published in the university bulletins, this study will constitute one of the greatest engineering achievements of modern times. Making standards for the car wheel, which ought to be recognized as the most important part of the car structure, without reference to fundamental principles is absolutely unjustifiable.

The foregoing joint paper by G. W. Lyndon, President, and F. K. Vial, Consulting Engineer, Association of Manufacturers of Chilled Iron Car Wheels, was read before the Pittsburg Railway Club recently.



Mount Chamberlin, Rocky Mountains.

As stated in Canadian Railway and Marine World recently, the Geographic Board of Canada has named a splendid peak in the Rocky Mountains "Mount Chamberlin," in honor of E. J. Chamberlin, President, Grand Trunk and Grand Trunk Pacific Railways. The peak is at the southerly end of a massive mountain range in the Grand Fork amphitheatre, and is surpassed only by its near neighbor, Mount Robson.

Dynamiter Convicted.—Werner Horn, who was arrested in Feb. 1915, for attempting to blow up the C.P.R. international bridge at Vanceboro, Me., was found guilty, June 14, by the U. S. court at Boston, Mass., of unlawfully transporting dynamite in interstate commerce. Sentence was deferred.

Delaware and Hudson Co's Annual Report.

The annual report of the D. & H. Co.'s operations for the calendar year 1916, shows a profit of $4,158,372.18 against $6,071,440.64 for 1915. The company's railway mileage is 909.38, of which 219.24 are in Canada.

"The Quebec, Montreal & Southern Ry. had an increase in operating revenues of $79,959; its operating expenses increased $13,925; its income from time of equipment increased $20,892.99, and its net income, not making any deduction for interest due the D. & H. Co. was $190,845, an increase over 1915 of $94,656.

The Napierville Junction Ry. had an increase in operating revenues of $37,041, an increase in freight receipts of $38,570, being accompanied by a decrease of $1,401 in passenger earnings. Operating expenses increased $24,390.82 and net income was $50,531.56, an increase of $8,-608.54 over 1915. A dividend upon the capital stock, at the rate of 6% for the calendar year 1916, was declared.

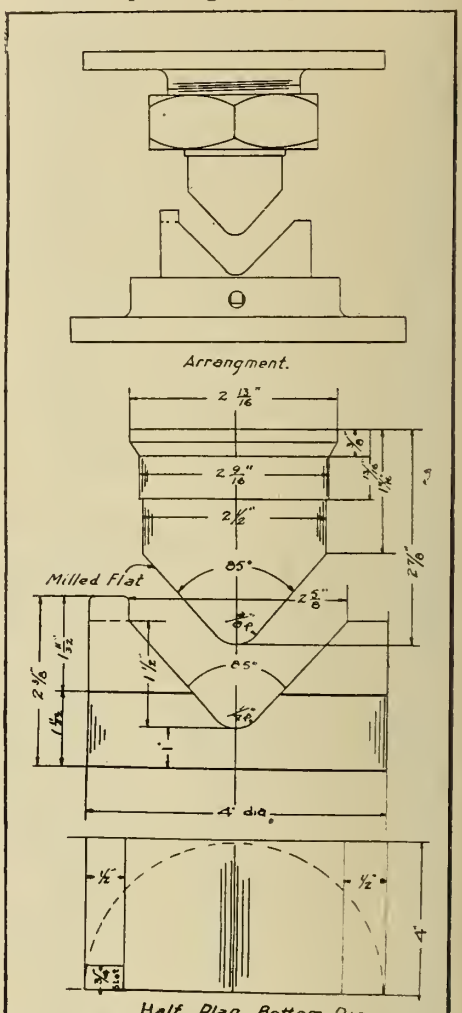
In the statistical tables it is shown that the entire capital stock of the Quebec, Montreal & Southern Ry., $1,000,000, and of the Napierville Jct. Ry., $600,000, is owned by the D. & H. Co.

Car Supply Information for Board of Railway Commissioners.

The Board of Railway Commissioners has given notice that railway companies shall make a report to its Chief Operating Officer at Ottawa, on the 1st and 15th of each month, on the condition of the car supply on their respective lines, giving the following information: The total number of cars under load with revenue freight at stations; the different kinds of cars being shown separately, viz., box, stock, refrigerator, coal, flat, other cars. The total number of loaded cars in transit, either in trains or at stations. The total number of empty cars under the different headings. The total demand for empty cars for loading, as per the daily orders, under the different headings. The total shortage or surplus, as the case may be, to be set out. The number of idle cars, if any, under the different headings. An idle car means a car that has not been moved on account of there being no demand for it. The total number of cars, under the different headings, held for repairs.

Die for Bending Car Grab Irons, Canadian Pacific Railway.

The accompanying illustration shows a steel die operating in a punch for bending car grab irons, or other necessary bends or that nature. As many right angles can be made as necessary, it not being found necessary to heat the iron in using the die. We are indebted for this information and for the drawing to A. T. Shortt, Superintendent of Shops, Ogden, Alta.



Die for Bending Car Grab Iron.
Die to be made to suit machine required for.

The Board of Railway Commissioners devoted the whole of June to holding sittings mainly outside Ottawa, one section under Sir Henry Drayton, taking Western Canada, and the other, under D'Arcy Scott, taking Eastern Canada. The sittings in the West started at Victoria, June 4; subsequent sittings being held at Vancouver, June 6; Nelson, June 16; Calgary, June 18; Edmonton, June 19; Saskatoon, June 20; Regina, June 21; Winnipeg, June 22 and 23; and Fort William, June 25. The sittings in Eastern Canada included hearings at Ottawa, June 5, and Toronto, June 12. The most important matter was the hearing of statements from interested associations in various parts of the country with regard to the railway companies application for an increase in freight rates.

King's Birthday Honors for Canadian Transportation Men.

The customary list of honors in celebration of the King's birthday, June 3, contained the names of several Canadians, of whom the following are associated with transportation interests:

George Bury, Vice President and director, C.P.R., Knight Bachelor, on the recommendation of the Prime Minister of Great Britain and Ireland.

Augustus M. Nanton, director, C.P.R., and Vice President, Winnipeg Electric Ry.; Knight Bachelor.

Temporary Brigadier General A. D. Macrae, formerly one of the land commissioners, Canadian Northern Ry., Companion of the Order of the Bath.

Temporary Brigadier General F. S. Meighen, director, C. P. R., Companion of the Order of St. Michael and St. George.

G. A. Bell, Financial Comptroller, Department of Railways and Canals, Companion of the Order of St. Michael and St. George.

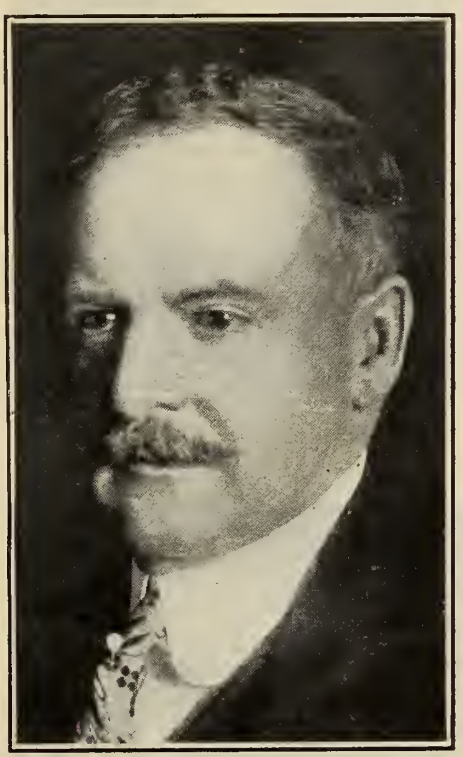
Lieutenant Colonel C. H. Mitchell, a civil engineer, Companion of the Order of St. Michael and St. George.

Sir George Bury was born at Montreal, Mar. 6, 1866, and entered C.P.R. service in 1883, since when he has been, to 1887, clerk in Purchasing Department, and in General Manager's office; 1887 to 1889, secretary to Vice President, and afterwards to President; 1889 to Mar. 1890, acting Superintendent, Sleeping Dining and Parlor Car Service; Mar. 1890 to Sept. 1899, successively, Assistant Superintendent, Chalk River, Ont., and Superintendent, North Bay, Ont.; Sept. 1899 to Feb. 1901, Superintendent, Fort William, Ont.; Feb. 1901 to Feb. 1902, Superintendent, Crowsnest Pass Line, Cranbrook, B.C.; Feb. to May 1902, Assistant General Superintendent, Lake Superior Division, North Bay, Ont.; 1905 to Feb. 1907, General Superintendent, Central Division, Winnipeg; Feb., 1907, to Mar. 1, 1908, Assistant General Manager, Western Lines, Winnipeg; Mar. 1, 1908 to Oct. 1911, General Manager, Western Lines, Winnipeg; Oct. 1911 to Dec. 1913, Vice President and General Manager, Western Lines, Winnipeg; Dec. 1912 to Dec. 1914, Vice President in charge of Western Lines, Winnipeg; Dec. 1914 he was appointed Vice President of the Company, Montreal, and also elected a director and member of the executive committee.

Sir Augustus M. Nanton was born at Toronto, May 7, 1860, and is a partner of Sir Edmund B. Osler, M.P., in the brokerage firm of Osler, Hammond and Nanton, Winnipeg. He is a director of the C.P.R. and Vice President and a director, Winnipeg Electric Ry., and was Managing Director of the Alberta Ry. and Irrigation Co., until it was taken over by the C.P.R. From 1894 to 1898, he was receiver for the English bondholders in the Manitoba and Northwestern Ry., and has been associated with many public organizations in Winnipeg, among them being: Board of Trade, President in 1898; Stock Exchange, President; Manitoba Cartage Co.; Dominion Bank; Great West Life Assurance Co.; Western Stockyards Co., and Toronto General Trusts Corporation. Since war broke out he has taken a very prominent part in patriotic work.

Temporary Brigadier General A. D. Macrae, C.B., was formerly a partner of the firm of Davidson and Macrae, Toronto, who were at one time Land Commissioners, Canadian Northern Ry. He lived in Vancouver prior to the outbreak of war, being largely interested in lumber and other business. Since going to England he has performed various services for the Canadian military forces.

Temporary Brigadier General F. S. Meighen, C.M.G., was born at Montreal, Dec. 24, 1869. He is President, Lake of the Woods Milling Co., director, C.P.R., New Brunswick Land and Ry. Co., Canadian Northwest Land Co., and is associated with several industrial and charitable organizations. Prior to the war, he was Lieutenant-Colonel commanding the 5th Royal Highlanders, and volunteered



2491. Sir George Bury

for service in the South African war. He is a son of the late Robert Meighen, a C.P.R. director, and his mother was sister of Lord Mount Stephen, first President of the C.P.R.

G. A. Bell, C.M.G., is Financial Comptroller, Department of Railways and Canals, Ottawa.

Lieutenant-Colonel C. H. Mitchell, C.M.G., is a member of the Canadian Society of Civil Engineers, the American Society of Civil Engineers, and associate member of the Institution of Civil Engineers (London), and of the American Institution of Electrical Engineers. He was for some time with the Westinghouse Electric and Manufacturing Co., and later was manager of the Ontario Power Co. Prior to the outbreak of war, he practised as a civil engineer in Toronto. He has also been decorated with the French Croix de Guerre and the Cross of the Legion of Honor.

The Canadian Northern Ex. Co. has opened offices at Hull, Que; Camp Mohawk, Ont., and Grand Beach, Man.

Prince Edward Island Car Ferry Terminal.

The Minister of Railways made the following statement in the House of Commons recently: "At Cape Tormentine, N.B., the landing pier and the bridges for transferring cars between pier and steamship deck are completed, some adjustment of machinery in the power house, and the installation of electric light plant, being all that is required to render this terminal available for service. Additional stone is yet to be added to the breakwater, and the capping stone placed, but the structure in its present condition affords good protection to the steamer berth and turning basin. At Point Borden, P.E.I., progress during the season suffered through shortage of labor and the occurrence of violent storms. The railway connection between the ferry landing and the existing lines of the P.E.I.R. has been completed, together with the terminal yard and buildings at Point Borden. Some additional facilities for handling freight at this point will be added as business develops. About a week's dredging is required to clean up some high spots to give a workable turning basin for the steamer, although considerable derdging will be required to enlarge the basin to specifications. This, however, can be done during the summer. Taken altogether, the landing at Point Borden is now usable, except for the lack of a spring fender. The work on this is well forward, and the placing of the fender should be completed in June, and the work in all respects completed this season. The total estimated cost of the work is $2,910,000, of which we have expended to date $2,600,000."

Railway Lands Patented.—Letters patent were issued during May, in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres.
Calgary and Edmonton Ry.	8,740.517
Canadian Northern Ry.	12,337.94
Canadian Pacific Ry. grants	19.35
Canadian Pacific Ry. roadbed and station grounds	6.38
Edmonton, Dunvegan and British Columbia Ry.	.19
Grand Trunk Pacific Ry.	27.77
Manitoba and Northwestern Ry.	10.99
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	4,771.385
Total	25,914.522

The Imperial Munitions Board, having consented to release the necessary amount of steel, the Railways Department arranged a little while ago with the Dominion Iron & Steel Co., Sydney, N.S., to roll 10,000 tons of rails, C.P.R. section, 85 lb., for main line renewals. Since then, it having been found that at least 15 more miles of track should be relaid in order to be in good shape for next year's traffic, arrangements have been made for rolling an additional 2,000 gross tons. Delivery is expected to commence in July and to be completed as soon as the finishing of the rails can be effected and car supply will admit. It is expected to get the rails laid during the latter part of the summer.

The Canadian Northern Railway Announces that up to June 1 of the present crop year, which began on Sept. 1, 1916, it handled 58,477 cars of grain originating from territory served by it in Manitoba, Saskatchewan and Alberta. This constitutes 30.4% of the total handlings of all the roads operating in Canada to date, and is an increase of 1.6% over the same period last year.

Mainly About Railway People Throughout Canada.

Lord Shaughnessy was given an honorary degree at Dartmouth College, Boston, Mass., June 20.

M. J. O'Brien, railway contractor, etc., Renfrew, Ont., has been elected a director of the Bank of Ottawa.

Hon. William Owens, President, Centray Ry. Co. of Canada, died at Westmount, Que., recently.

Wm. Keating, State Auditor of Montana, and at one time City Passenger Agent, G.T.R., Toronto, died suddenly at Helena, Mont., June 23.

W. R. Baker, C.V.O., formerly Secretary, C.P.R. Co., returned to Montreal, June 15, after a four months holiday trip to China, Korea and Japan.

George Mountain, M.Can.Soc.C.E., Chief Engineer, Board of Railway Commissioners, Ottawa, has been absent from his office for some weeks, owing to illness.

Sir Wm. D. Reid, President, Reid Newfoundland Co., and J. K. L. Ross, director, C.P.R., have been elected directors, Dominion Steel Corporation.

Sir Thomas Tait, President, Fredericton & Grand Lake Ry. & Coal Co., with Lady and Miss Tait, left Montreal, June 19, for St. Andrew's-by-the-Sea, N.B.

F. P. Gutelius was entertained to dinner by the Moncton Club, at the end of May, on leaving Moncton, N.B., to assume the duties of Vice President, Delaware & Hudson Co., Albany, N.Y.

F. E. Dewey, Operating Receiver, Gulf, Florida & Alabama Ry., Pensacola, Fla., has also assumed the duties of General Manager, that position having been abolished.

R. Hayes, chief clerk to General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B., was presented with a leather upholstered rocker, June 2, by the staff, on the occasion of his wedding, which took place at Halifax, N.S., June 5.

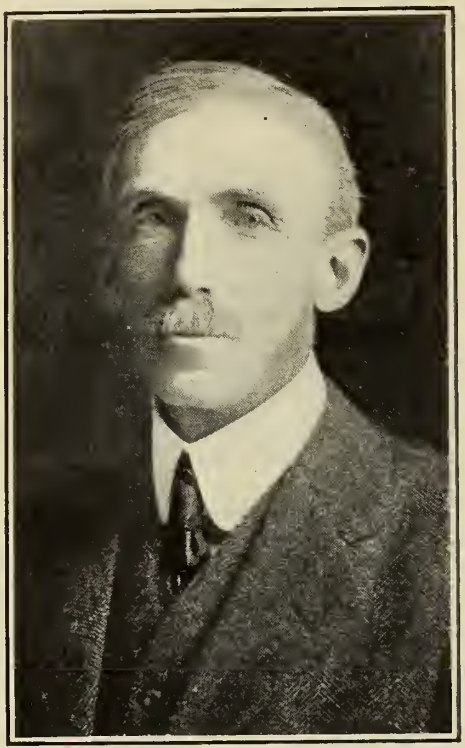
J. L. Englehart, Chairman, Timiskaming & Northern Ontario Ry. Commission, has given $10,000 for the addition of a maternity annex to the Charlotte Eleanor Englehart Hospital, Petrolea, Ont., which he provided as a memorial to his late wife, about six years ago.

H. H. Vaughan, M.Can.Soc.C.E., formerly Assistant to Vice President, and afterwards Consulting Mechanical Engineer, C.P.R., and latterly President, Montreal Ammunition Co., has been appointed General Manager, Dominion Bridge Co., Lachine, vice G. H. Duggan, M.Can.Soc.C.E., appointed Chairman of the Board.

H. R. Charlton, General Advertising Agent, G.T.R., Montreal, has been awarded a gold medal and diploma by the Panama-Pacific Exposition international jury for his work as collaborator, in connection with the G.T.R. pavilion and exhibit, which were considered a feature at the exhibition at San Francisco last year.

Morley Donaldson, Vice President and General Manager, Grand Trunk Pacific Ry., Winnipeg, who has been ill for some time, is at the Royal Victoria Hospital, Montreal, where he is reported to be improving somewhat. When able, he will go to his home in Ottawa for a time. His official duties are being carried out by A. A. Tisdale, his assistant.

Donald Grant, who died at Faribault, Minn., June 13, was associated with railway building for many years. He was born at Glengarry, Ont., and



D. A. Story,
General Traffic Manager, Canadian Government Railways.

L. C. Fritch

from 1863 was actively engaged in railway building, both in Canada and the U.S. He was a contractor on the heaviest portion of the C.P.R., between Winnipeg and the Rocky Mountains, and subsequently built the extension of the St. Paul & Manitoba Ry., from Minot, N.D., to Great Falls, Mont., 750 miles.

James Spelman, M.Can.Soc.C.E., President, John S. Metcalf Co., designers and builders of grain elevators, Montreal and elsewhere, died at Westmount, Que., May 27, aged 56. He was born at Ottawa, Ont., and educated there and at the Royal Military College, Kingston, Ont. He was engaged for some time on C.P.R. construction in the west, and subsequently allied himself with the John S. Metcalf Co., of which he had been Vice President for some years, and President since 1916. He was a member of the Engineers' Club, Montreal, and of the Western Society of Engineers.

C. O. Foss, whose appointment as Chief Engineer, St. John Valley Ry., Fredericton, N.B., was announced in our last issue, was born in New Hampshire, Mar. 20, 1852, and from 1878 to 1884, was engaged in general engineering practice at Concord, N.H. He was, from 1884 to 1904, Chief Engineer, Nova Scotia Central Ry., Bridgewater, N.S.; from 1904 to 1908, Assistant District Engineer, National Transcontinental Ry., St. John, N.B., and from 1908 to 1914, District Engineer, N.T.R., St. John, N.B.

D. B. Hanna, Third Vice President, and F. H. Phippen, K.C., General Counsel, Canadian Northern Ry., with others, were defendants recently in a case brought by the National Trust Co., as liquidators of the Great West, Iron, Wood & Chemical Works, Ltd., Prince Albert, Sask., claiming that they should contribute the par value of 999 shares to the company's assets, and also alleging that they had been guilty of wrongful conduct. The suit was dismissed with costs, all points being found in defendants' favor.

A. T. Weldon, who has been appointed General Freight Agent, Canadian Government Railways, Moncton, N.B., was born at Dorchester, N.B., Mar. 6, 1876, and entered transportation service in 1890, since when he has been, to Apr., 1900, in different capacities in the Freight Department, Intercolonial Ry.; Dec., 1901, to Aug., 1904, in Division Freight Agent's office, I.R.C., Halifax, N.S.; Aug., 1904, to May 1, 1907, Secretary, Halifax Board of Trade; May 1 to Nov. 18, 1907, General Sales Agent, Port Hood-Richmond Ry. Coal Co., Halifax, N.S.; Nov. 18, 1907, to 1909, Division Freight Agent, I.R.C., Halifax, N.S.; 1909 to Oct. 1, 1914, Geenral Freight and Passenger Agent, Black Diamond Steamship Co., Montreal; Oct. 1, 1914, to June 9, 1917, Assistant General Freight Agent, Canadian Government Railways, Moncton, N.B.

John Earls, who died somewhat suddenly at Toronto, June 3, was born in Ireland, Oct. 30, 1838. He entered G.T.R. service in 1862, since when he was, to 1863, corresponding clerk, Toronto; 1863 to 1866, clerk, Sarnia, Ont.; 1866 to 1868, corresponding clerk, Portland, Me.; 1868 to 1871, cashier and accountant, freight and steamship department, Portland, Me.; 1871 to 1872, chief clerk, General Freight Agent's office, Toronto; 1872 to 1875, chief clerk, General Freight Agent's office, Montreal; 1875 to 1877, Assistant General Freight Agent, Eastern District; 1877 to 1884, Assistant General Freight Agent, Western District; 1884 to 1892, District General Freight Agent, Western,

and Northern and Northwestern Districts; 1892 to Mar., 1896, District General Freight Agent, and from Mar., 1896, to 1905, Secretary and Treasurer, Canadian Freight Association.

Alan H. Jones, who was appointed Assistant Engineer, Canadian Government Railways, Moncton, N.B., recently, was born at Liverpool, Eng., Feb. 16, 1884, and has been, from April, 1902, to Aug., 1904, draughtsman, Jewett Car Co., Newark, Ohio; Aug., 1904, to Jan., 1905, draughtsman, Brooklyn Rapid Tranist Co., New York; Feb., 1905, to Feb., 1908, draughtsman, on grade separation work, New York Central Rd., New York; Mar. to June, 1908, Assistant Engineer, Third Avenue Ry., New York; June, 1908, to Jan., 1911, engineering, surveying and Mapping, Delaware & Hudson Co., Scranton Pa., and Montreal; Jan., 1911, to April, 1912, Assistant Engineer, Windsor St. Station, C.P.R., Montreal; April, 1912, to Jan., 1915, instrument man on construction, Campbellford, Lake Ontario & Western Ry. (C.P.R.); Jan. to Nov., 1915, draughtsman, Canadian Government Railways, Moncton, N.B.; Nov., 1915, to Jan., 1917, Resident Engineer, District 4, Intercolonial Division, Canadian Government Railways, New Glasgow, N.S.

Louis Charlton Fritch, who has been apopinted General Manager in charge of operation, Seaboard Air Line Ry., Norfolk, Va., was born at Springfield, Ill., Aug. 11, 1869. He took a course in civil engineering at the University of Cincinnati, and subsequently a law course, and was admitted to the Ohio bar in 1899. He entered railway service in 1884 as supervisor's asistant, Ohio & Mississippi Ry., and was from Jan. 1, 1886, to Oct., 1892, Assistant Engineer, same road; Oct., 1892, to Nov. 1, 1893, Engineer,, Maintenance of Way, same road; and was also Construction Engineer in charge of construction, Cincinnati & Bedford Ry.; Nov. 1, 1893, to Sept. 1, 1899, Division Engineer, Baltimore & Ohio Southwestern Rd., which absorbed the Ohio & Mississippi Ry.; Sept. 1, 1899, to Nov., 1902, Superintendent, Mississippi Division, same road; Feb., 1904, to Mar. 1, 1905, engaged on special work, Illinois Central Rd., Chicago, Ill.; Mar. 1, 1905, to Nov., 1906, Assistant to General Manager, same road; Nov., 1906, to Mar. 1, 1909, Assistant to President, same road; Mar. 1 to Nov. 15, 1909, Consulting Engineer, same road; Nov. 15, 1909, to Mar. 31, 1914, Chief Engineer, Chicago Great Western Rd., Chicago, Ill.; Mar. 31, 1914, to Aug., 1915, Assistant to President, Canadian Northern Ry., Toronto, and from Aug., 1915, to June 1, 1916, General Manager, Eastern Lines, same road, Toronto. He is a member of the American Society of Civil Engineers, American Institute of Electrical Engineers, American Railway Engineering Association, American Society for the Advancement of Science, Western Society of Engineers, and the Geographical Society. He was President of the American Railway Engineering Association in 1910, a director from 1905 to 1913, and a member of the rail committee in 1913; a member of the railway committee of the American Institute of Electrical Engineers from 1910 to 1913; chairman of the committee on engineering of the American Railway Association in 1913; a member of the committee on electrical working, of the American Railway Association, from 1910 to 1913, and a member of the committee on electricity, of the American Railway Engineering Association from 1910 to 1913.

A. D. MacTier on the Coal Transportation Question.

A. D. MacTier, General Manager, Eastern Lines, C.P.R., issued the following statement recently: "This country is face to face with a coal shortage of very alarming proportions, and by next winter, if conditions under which fuel may be obtained do not alter in the meantime, a great many industrial concerns and householders will be unable to supply themselves with sufficient coal to carry them through the severe weather. The present and prospective difficulties in the way of bringing coal into Eastern Canada may be attributed to a number of causes, principal amongst which are dearth of mining labor and shortage of coal carrying equipment at the mines. The situation in some of the mining territories is that, even with the labor shortage, operators are able to turn out coal at a greater rate than they can obtain cars to carry it away. It, therefore, naturally follows that more coal could be brought into Canada if the car supply was increased. Unfortunately, it is out of the question to obtain any number of new cars at this time, and the situation can be met only by obtaining more service from the present rolling stock. To do this cars must be moved promptly between the mines and destination, and must be unloaded as soon as they reach consignees.

"Railways must have coal, in order to discharge their obligations to the country, and for their own preservation, as wel las for the benefit of their patrons, they are putting forth their utmost efforts to minimize delay to cars while en route to and from the mines. All efforts in this direction, however, will be of little avail without the wholehearted cooperation of the man who unloads the coal and releases the car after it gets to its destination. Some consignees, who thoroughly appreciate the situation, have almost a 100% record in the prompt unloading of coal cars, but there are others who are helping to create the prospective shortage of coal by keeping the equipment out of active service. Today there are in one town of comparatively small size 52 coal cars awaiting unloading. The arrival of these cars was spread over 31 days, an average of cars received per day of 1.68. They are consigned to three organizations which have the facilities for unloading a large number of cars each day. These 52 cars have been out of service a total of 1,029 car days. Coal cars that are not held for storage purposes, as these cars are, average at least 50 miles a car a day. Had the 52 cars been unloaded promptly they would have, by this time, travelled 51,450 miles. The distance from the point where they are now located to the coal mining territory is approximately 400 miles. It follows, therefore, that had the 52 cars been in active service they would have been available to bring into the country 64 carloads, or about 3,200 tons of coal. The quantity is not very large, it is true, when the total demand is considered, but it would have kept over 300 families warm for the winter or heated the boilers in an industrial plant for some little time.

"Unfortunately, the case cited is not the only one of its kind. It is one of the worst, but there are hundreds of cars lying idle, waiting to be relieved of their loads, so that they may go back to the mines for more coal. The coal dealer and consignee can do the country an immense service by promptly releasing rolling stock and helping to reduce car shortage at the mines. There is also the man who has always called for open top cars for the handling of his goods because the loading and unloading with that class of equipment is more economical than in using closed cars. When he insists on being supplied with cars that should be in the coal business he is helping to create a coal shortage by keeping cars away from the mines. No doubt, he is a heavy coal consumer. As a business proposition, would it not be more economical for him if he used closed cars now and enabled the railways to transport more coal into the country so that he would not be in danger of having to close down his plant altogether later on account of being unable to obtain fuel. The C.P.R., for itself, and on behalf of other railway companies, most earnestly calls upon its patrons and employes to do their utmost to fight off the impending shortage of fuel by keeping coal cars continuously in the proper service, which is the transporting of coal."

Dominion Railway Act Revision.

The special committee of the House of Commons appointed to consider the revision and consolidation of the Railway Act, completed its work, June 7, and presented its report, with the bill as amended, to the house, June 8.

Two important clauses were added by the committee. The first provides that the Canadian Government Railways should be subject to the act, except so far as the expropriation of land is concerned, and the second gives cities the right to appeal to the Board of Railway Commissioners to compel steam railways to grant commutation tickets to suburban points. The effect of the first of these clauses will be to bring the rates charged on the government railways under the Board of Railway Commissioners, and the second will be to allow an appeal against the cutting off of commutation tickets from any place to which they are now being issued, and to permit cities to make application to compel railways to grant commutation privileges to points where they are not now available.

After considerable discussion the committee refused to endorse the section sought to be added to the measure by the chairman, J. E. Armstrong, to place inland water carriers under the control of the Board of Railway Commissioners with regard to rates.

The committee recommended that the minutes of proceedings and the evidence given be printed and issued as an appendix to the journals of the house.

Dominion Government Elevators.—The Minister of Trade and Commerce stated in the House of Commons, June 7, that prior to Oct. 1, 1911, there were no goverment terminal and interior storage elevators in the Dominion, but that since that date five had been built, at Port Arthur, Ont.; Moose Jaw and Saskatoon, Sask.; Calgary, Alta., and Vancouver, B.C., respectively.

Station Telephone Facilities. — In connection with the Great Northern Ry. and Northern Pacific Ry. joint terminal station, Vancouver, which was opened June 1, a 50 pair telephone cable has been laid, and facilities are provided for connecting the switchboard up will all incoming trains, so that passengers can be given connection with any part of the city as soon as the trains pull up.

The National Transcontinental Railway Showed a Deficit, Not a Surplus.

The Hon. G. P. Graham asked the following questions in the House of Commons recently: "In the Quebec Chronicle, dated May 8, 1917, the following statement appears in reference to the Transcontinental Ry., viz.: 'The railway has been in operation from Moncton and Quebec to Winnipeg for over a year, and the return of its first year's operation is just appearing in the government blue book, which shows that the gross earnings amounted to the handsome sum of $5,798,516, and that a profit has been made in the first year of $429,455.' 1. Is this statement accurate? 2. If not, what is the accurate statement?"

The Minister of Railways replied: No. The figures quoted are taken from the Annual Report of Railway Statistics for the year ended June 30, 1916, at page 45. Page 99 of that report shows deductions, and the result for the 12 months is shown therein as a loss of $341,615.51. To this should be added the rental of leased line from Fort William to Superior Junction for 12 months, $600,000, making the total loss $941,615.51. The railway was operating from Moncton through to Winnipeg as from May 1, 1915. Operating expenses, including rental of leased line from Fort William to Superior Junction, for 12 months ended April 30, 1916, were $4,960,434.11, and net operating revenue $4,083,603.51, a loss of $876,830.60.

The article in the Quebec Chronicle was apparently written under a misapprehension as to what the columns in table 6, pgs. 44 and 45, of the Report on Railway Statistics for the year ended June 30, 1916, purported to give. The columns contain: 1, passenger earnings; 2, freight and switching earnings; 3, other earnings from operation; 4, total gross earnings from operation. The next column gives the operating expenses, details of which are given in table 8, while the last column gives the net operatitng earnings, ascertained by deducting the operating expenses from the total gross earnings from operation. So far as the National Transcontinental Ry. is concerned, the figures are: Total gross, including other earnings from operation, $5,798,516.09; operating expenses, $5,369,061.58; net operating earnings, $429,454.51.

The net operating earnings are carried forward to what is called income account, pgs. 94-97, and which brings into account other sources of revenue, which, in the case of the N.T.R., amount to $37,670.84, giving a total gross corporate income of $467,135.35. The second part of table 8, pgs. 98-101, shows the deductions from gross corporate income, including rents from lease of other lines, other rents, interest on funded debt, other interest, sinking fund and all other deductions, which, in the case of the N.T.R., amount to $808,750, showing a net corporate loss of $341,615.51.

The accounts of all the railways in Canada are dealt with in the same way in the compilation of the tables in the department's statistical report. The point raised by the questions asked by Mr. Graham is, do the statistical tables convey a wrong impression to those who refer to them as to the information they contain? The figures in table 7 evidently conveyed to the writer in the Quebec Chronicle that net earnings from operations means profit, and that being the case, it is not unlikely there are others who interpret the figures in the same way. A rearrangement of the tables, or the appending of explanatory notes, is very necessary, and should be adopted before the next report is brought out.

Hudson Bay Railway and Terminals Construction.

The Minister of Railways made the following statement in the House of Commons recently: "During the past year the rail bed on the H.B.R. was carried to mile 332, at the crossing of Nelson River, at Kettle Rapids. The work was behind schedule, partly owing to a labor shortage and partly to the destruction by fire of the contractor's tracklaying outfit, thus preventing the construction of the substructure of this bridge before the rise of water which here accompanies ice formation. The substructure of this bridge was expected to be completed on the south side of the Nelson River on May 21, 1917, and preparations for start on north side will follow immediately. The steel work of the superstructure is en route to this site. Of the 92 miles of grade between the bridge and Port Nelson, work remains to be done at isolated points to an aggregating amount of 11 miles of light grading. Some train filling remains to be done on the portion of the line now built, and much of it has only received a first lift of ballast. It is contemplated that track will be laid into Port Nelson this year and the ballasting of the line brought into fair shape to within a few miles of that terminus.

"At Port Nelson a somewhat restricted programme has been followed, owing to the effect of war conditions upon labor, materials and ocean tonnage. The bridge structure connecting the deepwater wharves with the mainland was completed, and 1,600 lin. ft. of the cribwork of the island placed, built up and filled. The hydraulic dredge worked throughout the season in the channel. The clam shell dredges were employed in dredging stone and gravel from the river bottom for crib filling. During the present season it is hoped that a considerable portion of the island, including the site for the elevator, will be enclosed, and several sections of the deep water dock face cribs placed in position.

"The total estimated cost of this work is $26,000,000. We have expended to date $18,175,000, of which $12,656,000 has been in connection with the railway, and $5,610,000 in connection with the terminal work at Port Nelson."

The G.T.R. Apprentices at Stratford, Ont., held their annual dinner, June 17, when in addition to a number of the head office and local officials, the Chairman of the Board, A. W. Smithers, London, Eng., was present.

A Steel Car of 85 Tons, or 2,900 cu. ft. capacity, and having 5 hoppers instead of 4, has been built by the Pennsylvania Ry. The car has a length, coupled, of 50 ft. 4 in., and an extreme width of 10 ft. 2 in. The inside dimensions are 46 ft. 6 in. by 9 ft. 4⅞ in. The height above rail is 10½ ft., and the front wheelbase is 5 ft. 10 in. A heap capacity of 328 cu. ft. brings the total capacity to 3,228 cu. ft. The light weight of the car is 60,000 lb.

Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending June 8, 1917.	Wheat. Bushels.	Oats. Bushels.	Barley. Bushels.	Flax. Bushels.	Totals. Bushels.
Fort William—					
C.P.R.	1,994,092	1,214,130	194,134	.....	3,402,356
Consolidated Elevator Co.	298,942	283,024	24,073	85,558	691,597
Empire Elevator Co.	319,114	527,767	48,951	150,551	1,046,383
Ogilvie Flour Mills Co.	514,878	275,716	11,735	.....	802,329
Western Terminal Elevator Co.	274,446	309,364	28,672	214,543	827,026
G. T. Pacific	738,938	1,266,115	116,033	72,073	2,193,159
Grain Growers' Grain Co.	463,955	305,306	33,316	.....	802,577
Fort William Elevator Co.	320,902	316,060	27,605	71,819	736,386
Eastern Terminal Elevator Co.	249,575	355,049	30,390	.....	635,014
Thunder Bay Elevator Co.	443,877	641,753	58,861	17,063	1,161,544
Port Arthur—					
Port Arthur Elevator Co.	2,184,116	1,370,640	186,295	81,640	3,822,691
D. Horn & Co.	96,344	103,274	29,142	43,902	272,662
Dominion Government Elevator	989,066	1,227,589	47,944	98,678	2,353,277
Grain afloat	.....	.....	.....	.....	.....
Total terminal elevators	8,888,245	8,185,788	837,151	835,827	18,747,011
Saskatoon Dom. Govt. Elevator	834,874	176,739	15,062	87,824	1,114,499
Moose Jaw Dom. Govt. Elevator	1,269,163	279,907	13,875	33,353	1,595,298
Calgary Dom. Govt. Elevator	280,026	312,581	15,363	8,562	616,532
Vancouver Dom. Govt. Elevator	27,254	7,684	.....	.....	34,938
Total interior terminal elevators	2,411,317	776,911	44,300	128,739	3,361,267
Depot Harbor	385,092	.....	75,366	.....	460,458
Midland—					
Aberdeen Elevator Co.	.....	.....	.....	.....	.....
Midland Elevator Co.	.....	.....	.....	.....	.....
Tiffin, G.T.P.	382,224	759,236	.....	.....	1,141,460
Port McNicoll	221,749	948,859	61,894	.....	1,232,502
Collingwood	.....	46,155	.....	*82	46,327
Goderich	227,231	271,817	28,271	.....	527,319
Western Canada Flour Mills Co.	56,751	7,597	.....	.....	64,348
Kingston—					
Montreal Transportation Co.	2,622	183,512	.....	.....	186,134
Commercial Elevator Co.	81,405	68,891	.....	.....	150,296
Port Colborne	252,578	594,791	.....	.....	847,369
Montreal—					
Harbor Commissioners no. 1	1,144,941	1,947,632	201,476	.....	3,294,049
Harbor Commissioners no. 2	554,774	491,757	49,625	.....	1,096,156
Montreal Warehousing Co.	512,399	909,747	26,997	.....	1,494,143
Quebec Harbor Commissioners	3,851	49,472	.....	*11,862	65,185
West St. John, N.B.	211,922	11,614	6,252	.....	229,788
Halifax, N.S.	60,290	.....	.....	.....	60,290
Total public elevators	4,097,829	6,291,080	449,881	*11,944	10,850,734
Total quantity in store	15,397,391	15,253,779	1,331,332	*11,944 964,566	32,959,012

*Corn.

Traffic Orders by the Board of Railway Commissioners.

Rates for Canned Goods.

26168. May 31. Re complaint of Dominion Canners Ltd., against withdrawal of joint commodity rates on canned goods from points on the Canadian Northern Ry. south of Trenton, Ont., to points in Ontario west of Ottawa, Peterborough and Whitby. Upon the Chief Traffic Officer's recommendation, it is ordered that the C.N.R. be required to publish and file its proposed joint tariff on canned goods, in carloads, from and to the said points, to become effective not later than June 15, 1917.

Rates on Grain and Grain Products.

26172. June 5.—Re complaints of Montreal Board of Trade, Montreal Corn Exchange Association, Dominion Millers' Association, and James Richardson & Sons, against proposed advanced rates on grain and grain products published and filed by railways to take effect June 5, and subsequent dates. Upon hearing the complaints at Ottawa, June 1, the Canadian Pacific, Grand Trunk and Canadian Northern Railways, the complainants, and the Lake of the Woods Milling Co., St. Lawrence Flour Mills Co., Ogilvie Flour Mills Co., Dominion Flour Mills Co., Western Canada Flour Mills, Robin Hood Flour Mills Co., Canada Cereal and Flour Mills Co., Goldie Milling Co., and Canadian Manufacturers Association being represented, it is ordered that the following tariffs be suspended until further order: Grand Trunk C.R.C., nos. E-3571, E-3575, E-3576, E-3579, E-3582, E-3585, E-3586, and E-3587; Canadian Pacific C.R.C. nos. E-3304, E-3306, E-3307, E-3308, E-3309 and supplement 2 to C.R.C. no. E-3285; Canadian Northern C.R.C. nos. E-932, E-933, E-934, E-935, E-939 and supplement 1 to C.R.C. no. E-940; Chatham, Wallaceburg & Lake Erie C.R.C. 464, 472 and 476; Essex Terminal C.R.C. 421, 422 and 423; Glengarry & Stormont C.R.C. 65, 71 and 72; Hull Electric C.R.C. nos. F-74, F-77 and F-78; Lake Erie & Northern C.R.C. 78, 83, 84 and 86; London & Port Stanley C.R.C. 126, 130, 136, 137 and 138; Michigan Central C.R.C. 2646, 2662 and 2663; New York Central C.R.C. 1050 and 1051; Thousand Islands C.R.C. 318 and 319; Toronto, Hamilton & Buffalo C.R.C. 1158, 1163, 1164 and 1165; Pere Marquette C.R.C. 2107, 2108, 2113 and 2114; Wabash C.R.C. 1005, 1012 and 1014; Windsor, Essex & Lake Shore Rapid C.R.C. 204, 212 and 213.

Fruit Shipping Facilities at Jordan.

26181. June 5.—Re complaint of Jordan Co-operative Co., of Jordan, Ont., against facilities which Canadian Express Co. is giving at that point for shipping perishable fruits; and re application of Fruit Growers Association of Ontario for an order making effective this year order 24976, May 15, 1916, and if possible to extend the time of such service so as to read "from June 15," instead of "July 1." Upon its being represented to the board that the service required under order 24976 has been given a thorough test, and that on the showing made the board is not justified in directing that it be continued, it is ordered that order 24976, providing for the continuance of extra car service at Jordan, to be handled on train 97, be rescinded.

Freight Rate on Pedigree Bull.

26184. June 5.—Re complaint of D. A. McPhee, of Vankleek Hill, Ont., agaianst rates charged by Ottawa & New York and Grand Trunk Railways, on a registered Holstein bull, shipped from Russell to Vankleek Hill. Upon its appearing that the certificate of registration showing the bull to be a pedigreed animal was presented to the company's agent at the time of shipment, with the request that the shipment be made on the released valuation, as provided by the company's live stock contract; and that the failure to carry at the reduced rate was the fault of the company or its agent, and not that of the shipper, it is declared that the charge the Ottawa & New York and the Grand Trunk Railways were authorized to make for the said shipment should have been based on 4,000 lb. at one-half 1st class standard tariff rate, and leave is therefore granted the said railways to refund to the complainant the difference between such charge and the amount collected.

Interswitching at Thorold.

26186. June 5.—Re application of Town of Thorold for an order requiring interswitching between the Grand Trunk and the Niagara, St. Catharines & Toronto Railways at Thorold, it is ordered that the Grand Trunk and the Niagara, St. Catharines & Toronto Railways be directed to provide interswitching facilities between their respective railways at Thorold, the said railways to submit to the board, within 30 days, a plan showing the proposed transfer track, and an estimate of its cost.

Demurrage Improperly Collected.

26187. May 31.—Re complaint of Canadian Handle Manufacturing Co., of Strathroy, Ont., against a demurrage charge of $23 made by Michigan Central Rd. at Tilbury, Ont., on a shipment of logs from Warren, Mich. Upon its appearing that the toll in question was collected contrary to the provisions of sec. 315 of the Railway Act and rule 20 of Canadian Car Service Rules, it is declared that the M.C.R. was not authorized to make the said demurrage charge, and leave is therefore granted the railroad to refund to the complainant $23.

Rates on Pedigree Live Stock.

26194. June 6.—Re application of Canadian Pacific Ry. Co., under sec. 340 and 341 of the Railway Act, for approval of its Tariff C.R.C. no. E-3299, being a local freight tariff of rates on pedigree live stock, when shipped by the Ontario Department of Agriculture, Live Stock Branch. Upon the recommendation of the Board's Chief Traffic Officer, the Department of Agriculture offering no objection, it is ordered that the said tariff be approved.

Interchange Tracks at Ottawa.

26200. June 8.—Re application of New York Central Rd., lessee of Ottawa & New York Ry., under sec. 228 of the Railway Act, for an order requiring that the Ottawa & New York and the Grand Trunk Railways' tracks be so connected at or near Ottawa as to admit of the safe and convenient transfer or placing of locomotives, cars, and trains from the tracks or lines of the one railway to those of the other; and that such connection be maintained and used, as shown on the plan on file with the board. Upon the report and recommendation of the Chief Operating Officer and an engineer of the board, and proof of service or notice of the application upon the G.T.R., it is ordered that the applicant company be authorized to connect the Ottawa & New York Ry. tracks with those of the G.T.R. as shown on the said plan.

Rates on Ore and Rock.

26240. June 23.—Re application of Canadian Copper Co., of Copper Cliff, Ont., for an order disallowing Algoma Eastern Ry. Co.'s Tariff C.R.C. 167, advancing rates on ore and rock, effective Feb. 5, 1917. Upon hearing the application at Ottawa, Mar. 20, 1917, the applicant and the Algoma Eastern Ry. being represented by counsel, and consenting to the withdrawal of the application, it is ordered that the same be refused.

White Pass & Yukon Ry. Season Release.

26243. June 23.—Re complaint of J. E. Lilly & Co., of Dawson, Yukon, against abrogation of its season release with respect to certain items of Northern Freight Classification 6, providing alternative ratings based on stipulated valuations; and against amended Rule 21, item 1 of Supplement 2 to said classification. Upon hearing the complaint at Ottawa, June 19, 1917, in the presence of counsel for the White Pass & Yukon Ry., and upan reading the submission filed on behalf of the complainant, it is ordered that the complaint be dismissed.

"Follow Lot" Rule No. 3.

General order 189. May 23.— Re "Follow Lot," rule 3 of Canadian Freight Classification; and re railway companies being required to show cause why the rule in commodity tariffs filed in conformity with the judgment in the eastern rates case, also rule 8 of Canadian Freight Association's Westbound Transcontinental Tariff 1, stating that rule 3 of Canadian Freight Classification will not apply in connection therewith, should not be disallowed; Upon hearing the matter at Ottawa, Nov. 21, 1916, and in Toronto, Dec. 13, 1916, the Canadian Pacific, Canadian Northern, Grand Trunk, and Toronto, Hamilton & Buffalo Railways, Canadian Freight Association, Michigan Central Rd., Canadian Manufacturers' Association, Montreal and Toronto Boards of Trade, the Thomas Davidson Manufacturing Co., Sheet Metal Products, Ltd., Macdonald Manufacturing Co., and McClary Manufacturing Co., being represented, it is ordered that the said rule 3 be amended as follows: viz.: 1. By striking out the words, "provided first car (or cars) is loaded to the classification minimum," and substituting therefor the words, "provided that each car, except the car carrying the excess, must be loaded to its visible or marked capacity." 2. By striking out the words defining the classification minimum as being "not less than 20,000 lb. per car," and substituting therefor the words, "not less than 24,000 lb. per car." And it is further ordered that rules or regulations of general application, the effect of which is to deprive tariffs of various commodities of the benefit of the so-called "follow lot" rule of Canadian Freight Classification be disallowed; provided that this order shall not be construed as preventing railway companies and shippers, if they so desire, from agreeing, in respect of a particular commodity, or of particular commodities, upon commodities on a lower rate basis, with or without higher weight minima, to which the said rule shall not apply.

Rates for Ice Cream Cones.

General order 190. May 25. Re application of Canadian Manufacturers' Association for an order amending Canadian

Freight Classification 16 by providing a carload rating for ice cream cones; or an alternative direction to railway companies to publish carload commodity rates from Toronto to Montreal, Ottawa, Winnipeg, Regina, Calgary, Edmonton, and Vancouver. Upon hearing the application at Ottawa, May 15, 1917, Canadian Manufacturers' Association, Canadian Freight Association, and Canadian Pacific Canadian Northern, and Grand Trunk Railway Companies being represented, it is ordered that Canadian Freight Classification 16 be amended to provide a carload rating of third class, with a minimum of 16,000 lb., on ice cream cones.

Immigrant Baggage Storage.

General order 191. May 26. Re application of Eastern Canadian Passenger Association for an order amending rule 23 of the Regulations Governing Baggage Car Traffic in Canada, as prescribed by general order 151, Nov. 8, 1915. Upon reading what is filed in support of the application, and the recommendation of the Chief Traffic Officer, it is ordered that the said rule be amended by adding the following: "Storage—Rule 23. Exception (4)—Immigrant baggage will be stored free of charge for any portion of a period of, but not exceeding, five days after arrival, at the ports of Montreal, Toronto, and Winnipeg.

Salt and Ice for Refrigerator Cars.

General order 192. May 30. Re application of Canadian Manufacturers' Association for an order disallowing charges made by railway companies for salt supplied to refrigerator cars with ice; and re the proposed tariffs of railway companies increasing charges for ice supplied to refrigerator cars, the said tariffs having been suspended by general orders 164, April 25, 1916, and 165, May 16, 1916. Upon hearing the application at Ottawa, July 20, 1915, March 21, 1916, June 6, 1916; Calgary, July 10, 1916; Winnipeg, July 14, 1916, and Ottawa, Dec. 19, 1916, the Canadian Pacific, Grand Trunk, Canadian Northern, Grand Trunk Pacific, and Ottawa & New York Railways, the Michigan Central Rd., Canadian Manufacturers' Association, Ontario Fruit Growers' Association, Swift Canadian Company, P. Burns & Co., and the Montreal, Toronto, Winnipeg, Calgary, and Edmonton Boards of Trade being represented, it is ordered that the application for an order disallowing the charges now being made by the railway companies for salt supplied to refrigerator cars with ice be refused. And it is further ordered that the tariffs showing charges for ice supplied to refrigerator cars, which were suspended by the general orders 164 and 165, be disallowed.

Freight Classification Supplement Approved.

General order 193. May 31. Re application of Canadian Freight Association, on behalf of railway companies, under sec. 321 of the Railway Act, for approval of proposed Supplement 9 to Canadian Freight Classification 16, containing certain increases, reduced, and additional ratings. Notice having been given in the Canada Gazette by the railway companies, as required by sec. 321 of the Railway Act, hearings having been held, and the proposed changes having been fixed, by consent of the parties, or by orders of the board, or reserved for order of the board; and upon the recommendation of the Chief Traffic Officer, it is ordered that the said proposed Supplement, as finally revised and submitted for approval by the Chairman of the Canadian Freight Association, by letter dated May 12, 1917, be approved, subject to the following provisions, viz.: 1. That the proposed carloads ratings and minimum weights for games or toys, other than those of iron or steel, be struck out, and that there be submitted therefor a carload rating of 3rd class and a minimum of 14,000 lb. a car for toys and games of all kinds, as specified in the said supplement (excepting those made of iron or steel), in straight or mixed carloads. 2. That the item providing for popped corn or puffed rice confectionery be added to the grocery list of the classification, and that the ratings provided for these articles in cartons include bags. 3. That the said supplement give effect to general order 190 of May 25, 1917, fixing a carload rating for ice cream cones.

Express Rates on Horses.

General order 194. June 6.—Re application of Express Traffic Association of Canada, on behalf of express companies, for an order authorizing them to advance the estimated weight of horses, in carloads, from 10,000 to 12,000 lb. a car. Upon hearing the application at Ottawa, Feb. 20, 1917, the Express Traffic Association of Canada, the Department of Agriculture, the Montreal and Ontario Jockey Clubs, and other parties interested being represented, and upon the recommendation of the Chief Traffic Officer, it is ordered that the express companies be authorized to amend the Express Classification for Canada so as to increase the weight upon which the express charges for the carriage of horses are based from 10,000 to 12,000 lb. a carload.

Cartage Charges.

General order 195. June 23.—Re complaints of Toronto Board of Trade, Pilkington Bros, and Consolidated Plate Glass Co. of Canada, against proposed increase in charges for cartage as contained in tariffs filed by the various railways. Upon hearing the complaints at Toronto, April 14, the Toronto and Montreal Boards of Trade, Pilkington Bros., the Grand Trunk and the Caandian Pacific Railwys, Canadian Freight Association, Dominion Transport Co., and Shedden Forwarding Co., being represented, it is ordered that the companies' tariffs be amended by striking out the clause reading as follows: "Cartage charges will be collected on cartage freight upon the same basis of weights as assessed by the railway companies," and that there be substituted therefor the following: "Cartage charges will be collected on the basis of actual weight, subject to the minimum provided in Canadian Freight Classification."

Building Capacity for Rolling Stock.—The U. S. Council of National Defence requested recently that a committee of car and locomotive builders be formed to investigate the capacity of car and locomotive building plants in the country, and the extent of their ability to turn out additional motive power and equipment for railways in the U. S. and the various allied countries. A strong committee of the higher officials of the various plants has been formed, and the investigation is proceeding rapidly.

Aerial Railway for British Columbia.—A press report states that the Delta Copper Co. proposes to build 3½ miles of aerial tramway and a power plant at Skeena Crossing. The company's office is at 703 Tegler Building, Edmonton, Alta., its Chief Engineer being H. E. Clements, with office at Skeena Crossing.

Canadian Pacific Railway Construction, Betterments, Etc.

Manitoba District.—Among the works to be carried out at the eastern end of the district this year are the building of a new station at Dryden, Ont., and the extension of yard facilities at Ignace, Ont.

New station buildings are to be erected at Carey, Hazelridge and Riverton, Man.; automatic signals are to be installed at the Brandon terminals, and the freight shed at Swift Current is to be enlarged.

Tenders are under consideration for the construction of a concrete subway for pedestrian traffic under the tracks at Virden, Man. J. C. Holden, Brandon, Man., is resident engineer in charge of the work.

Saskatchewan District.—A train service was put in operation from Moose Jaw to Shaunavon, Sas., June 18. This was rendered feasible by the completion of a piece of line between Vantage and Assiniboine.

New station buildings have been, or are to be erected at Consul, Hatton, Kinley, Melaval, Piapot, Stalwart, and Vidora, Sask.

Progress is reported to have been made with the diversion of Frenchmen's River at three points west of Shaunavon, so as to protect bridges against spring freshets.

The new stone building at Regina for the Dominion Express Co., and the addition to the freight shed are reported to be well advanced.

Alberta District.—It is reported that among the additional betterments to be carried out during this year are the enlargement of the station at Macklin, and the erection of new stations at Enchant, Jenner, and Lomond, Alta.

A press report states that plans are being prepared for a rearrangement of the tracks in the yards, and the building of a station and residence at Magrath, Alta. The work, it is stated, is not likely to be undertaken this year.

Grant Hall, Vice President and General Manager Western Lines completed an inspection trip recently through the territory to be served by the projected extension of the Suffield-Retlaw line, into the Turin-Kipp district.

The finishing up work on the extension of the line easterly from Sterling, heretofore terminating at Pakowki, between that point and Manyberries, Alta., has been completed, and the train service was extended to the last named point June 3. (June, pg. 232.)

Alaska Rates.—In the Alaska investigation, in which the Pacific & Arctic Ry. & Navigation Co., the British Columbia-Yukon Ry. Co., the British Yukon Navigation Co., and the American Yukon Navigation Co. were complained of among others, the Interstate Commerce Commision has decided as follows: Respondents' rates, regulations, and practices governing transportation between points within Alaska and between points in the United States and points in Alaska are not found to be unreasonable. Special contract rates accorded cannery and mining companies on through rail and water shipments from points in the U.S. to points in Alaska found unjustly discriminatory. Allegations concerning the payment of rebates and the ownership by respondent railways or their interest in mines or minerals which they transport not sustained.

Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

The C.P.R. has, according to a Montreal press dispatch, lent $10,000,000 to the Imperial Munitions Board, to assist in the purchase of munitions in Canada during this year.

The Canadian Northern Ry. Patriotic Association, for the four months ended April 30, contributed $24,554.15 to the Canadian Patriotic Fund. The association covers the whole system from coast to coast.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association, up to Mar. 31, had contributed $18,278.36 to the Red Cross Society, $25,491.42 to the Canadian Patriotic Fund, and $11,860.25 directly to enlisted employes.

No. 2 Section, Skilled Railway Employes, which was mobilized in Montreal and arrived in England early in May, is now known as No. 13 Light Railway Co., R.E., British Expeditionary Force. They left Aldershot, Eng., June 7, for France, to operate light railways running from the base to the front.

C.P.R. Employes Enlisting in the U.S. —The C.P.R. has announced that it will allow all employes who enlist in the U.S. army or navy salary for 6 months, payable monthly, provided that they cross the ocean. On their return they will be given their former positions, or similar ones.

Canadian Railway Builders.—A special war correspondent, telegraphing recently from the Canadian forces in France, said: "One of the most urgent needs after a big push, such as Vimy, is laying railway tracks to a point as near as possible to the front line. Canadian railway units have done fine work in this respect, and completed laying 22 miles of track in five days recently."

G.T.R. Employes and the War. From the commencement of the war to the end of April, 3,342 G.T.R. employes had enlisted. Of these, 178 had been killed and 300 wounded. Two employes were awarded the Victoria Cross, four received the Distinguished Conduct Medal, two received Military Crosses and six, military medals. In addition, three employes were mentioned in dispatches. The company has contributed $120,000 to the patriotic fund, and had paid to employes enlisting $810,000 to the end of February. These amounts are in addition to those contributed to patriotic funds by employes.

The Timiskaming & Northern Ontario Ry. News Patriotic Association had up to April 30 subscribed as follows:—Canadian Red Cross, $18,775.28; Canadian Patriotic Association, $26,208.51; Canadian donation enlisted employes, $12,-297.59; total, $57,281.38. In addition to the above, many personal subscriptions for considerable sums have been made by members of the commission and employes and the entire Toronto office staff are active members of the 50,000 Club for the duration of the war. Special arrangements have been made by the Commission whereby employes are enabled to subscribe for government war savings certificates, and all departments of the road are availing themselves of the opportunity to have and serve.

A war correspondent, F. A. McKenzie, telegraphing to the Toronto Star from London, after a fortnight's visit to the western front, said: "One enormous improvement will be the system of railways, which is largely replacing the motor lorry service. New standard gauge lines are largely built by the Canadian corps, whose record feats are exciting great praise. One C.N.R. battalion which I visited had just completed building a section of line and a bridge 140 ft. long. They started Friday and finished Tuesday, then went at a line beyond, 12,069 ft. long. It was begun Tuesday and finished Wednesday night, the men working solely at night time on account of the enemy fire. The gallantry and ingenuity of these railway pioneers is amazing. They push rails right up to the enemy front. Their leader, Col. J. W. Stewart, maintains his old Western characteristics, saying little and keeping himself in the background, avoiding display, but organizing the machine perfectly."

PERSONAL NOTES.

Jas. Irwin, station agent, London & Port Stanley Ry., Port Stanley, Ont., has enlisted in the 63rd Battery, C.E.F., at London, Ont.

Major Maitland Kersey, D.S.O., Managing Director, Canadian Pacific Ocean Services, Ltd., London, Eng., was appointed to the staff of General Pershing, of the U.S. Army, during the latter's stay in England.

Capt. M. N. McPhee, of the Canadian Infantry, who was killed in action in France recently, lived in Edmonton, Alta., for several years. He was employed as a civil engineer on the Grand Trunk Pacific Ry.

Major W. P. Wilgar, B.A.Sc., M.Can.Soc.C.E., of the 4th Canadian Divisional Engineers, has been mentioned in Field Marshall Sir Douglas Haig's recent dispatches from the Canadian Expeditionary Force's headquarters in France.

George McLaren Brown, Reserve of Officers, Canadian Militia, and European Manager, C.P.R., has been appointed Assistant Director (unpaid) at the War Office in London, with the rank of Lieutenant-Colonel while so employed.

Lt. Col. G. D. Fearman, Chief Accountant, Dominion Power & Transmission Co., who went overseas in command of the 120th Battalion, C.E.F., has returned to Hamilton, Ont., and has reverted to the command of the 13th Royal Regiment there.

Robt. Vaux, Quartermaster-Sergeant, B. Company, Royal Highlanders of Canada, wrote his brother, G. W. Vaux, General Agent, Passenger Department, Union Pacific Rd., Chicago, recently, from France, that he was the only original non-commissioned officer left in the company.

D. Robertson, formerly Storekeeper, Grand Trunk Pacific Ry., Edmonton, Alta., having been honorably discharged from military duty on account of injuries received at the front in France, and not being able to return to duty, has been appointed acting Storekeeper, G.T.P.R., Transcona, Man.

H. L. Chipman, formerly Manager, Plant Line, Halifax, N.S., who has been on military duty almost since the war started, retired from the company's management at the end of 1916. He was Lt. Col., 66th Princess Louise Fusiliers, and is now in command of Wellington Barracks, Halifax.

Lieut. Hugh A. Crombie, who received a severe shell wound in the thigh in France, June 15, is son of David Crombie, General Superintendent, Canadian Northern Ry., Toronto. He went overseas with the Canadian Engineers, and subsequently transferred to a forestry battalion.

Capt. Redmond E. H. Hamilton, of Douglas Lake, B.C., who went overseas about a year ago in the 239th Battalion Overseas Railway Construction Corps, under Lt. Col. J. W. Stewart, is reported dead. He was engaged on construction on the Grand Trunk Pacific and Pacific Great Eastern Railways and lived in Prince George, B.C., for some time.

Major C. F. Hanington, M.Can.Soc.C.E., who is in the 7th Battalion, Canadian Railway Troops, British Expeditionary Force, was engaged on Canadian Northern Pacific Ry. location and construction in British Columbia, and on its completion received an appointment in the Public Works Department, Ottawa, which he held up to the time of joining the C.E.F.

Capt. H. E. Redmond Hamilton, of Vancouver, who went overseas last year with the Railway Construction Battalion, under Lt. Col. J. W. Stewart, with the rank of lieutenant, has been killed in action in France. He was engaged on the Grand Trunk Pacific Ry. construction for a time and was stationed at Prince George. He was a cousin of John Redmond, the Irish Nationalist.

Lieut. T. E. Ryder, Manager, St. John, N.B., branch, Canadian Fairbanks Morse Co., Ltd., who is on leave of absence for military duty was an officer in the St. John Battery previous to the war. When war broke out he enlisted for active service and was attached to the Ammunition Column Heavy Battery. He has been mentioned in dispatches, awarded the Military Cross, and has been promoted to Captain.

Capt. F. H. Moody, B.A.Sc., Jr.Can.Soc. C.E., who was reported wounded, May 26, was for three years prior to the war, Mechanical Editor, Canadian Railway and Marine World. He was in the Queen's Own Rifles, Toronto, for several years, rising to lieutenant, and went overseas as major in command of a company in an Ontario infantry battalion. He reverted to the rank of captain in order to get to France. His injuries from gunshot consist of a fractured left forearm and some flesh wounds. On June 14, we were officially advised that he was in the 4th London General Hospital. He hopes to be back on duty about the end of July.

Lieut. J. B. Thom, of the Canadian Engineers, British Expeditionary Force, who was reported on June 24 as having been wounded, is a son of the late Jas. Thom, Manager of the White Star-Dominion Line Steamships at Montreal for many years. He left Ottawa for overseas Mar. 9, 1916, and was in the same company as Lieut. Bruce H. A. Burrows, of Toronto, who was killed in action Nov. 25, 1916. They went first to the Ypres salient and afterwards to the Somme. In

the last letter Lieut. Burrows wrote before his death, to his father, on Nov. 17, 1916, he said: "Thom and I have built ourselves a very nice dugout, about 11 x 15 inside, with a good open fireplace, and now live in comfort, with hot water in the morning for shaving." Lieut. Thom could only have returned to France from leave a short time when he was wounded, as he was in England at the end of May, staying with his mother in Folkstone, and paid a brief visit to the late Lieut. Burrows' uncle, A. J. Burrows, of Kennington, Kent, on May 28.

Major W. P. Wilgar, who has been given the Distinguished Service Order, was born at Cobourg, Ont., Mar. 9, 1878, and entered railway service in 1899, since when he was, during the summer vacations to 1903, chain man, G.T.R., Cobourg, Ont., transit man, Kingston and Pembroke Ry., Kingston, Ont.; locating engineer, Bay of Quinte Ry., Deseronto, Ont.; and Resident Engineer, same road, Tweed, Ont.; he graduated from the School of Mining, Kingston, Ont., in 1893, with the degree of B.Sc., and from 1903 to 1904, was locating engineer, Central Ontario Ry., Trenton, Ont.; 1904 to 1905, in charge of exploration party in connection with the location of the National Transcontinental Ry.; 1905 to 1906, locating engineer, N. T. R., District C.; 1906 to 1908, locating engineer, N. T. R., District E.; 1908 to 1911 Division Engineer, N.T.R., District E.; 1911 to 1914, Assistant District Engineer, N.T.R., Districts C., D., and E.; Oct. 1914 to 1915, Professor of Civil Engineering, Queen's University, Kingston, Ont. He went overseas early in 1916, and is in command of the 19th Field Company, Canadian Engineers.

Brigadier General Herbert C. Nanton, C.B., R.E., has been gazetted in England as Chief Engineer attached to headquarters, with the rank of Major General while so employed. He is a brother of Sir Augustus Nanton, of Winnipeg, who is one of the C.P.R. directors and Vice President, Winnipeg Electric Ry. He was born in Toronto in 1863, graduated from the Royal Military College, Kingston, Ont., in 1883, and started his professional career as an engineer on C.P.R. location in the Rocky Mountains in 1884, H. S. Holt, now Sir Herbert Holt, being a member of the same party. He saw service in the Canadian Northwest Rebellion in 1885, the Lushai Expedition in 1888-89, the Chitral Expedition in 1895, and the South African War, 1899-1901, when he took part in the relief of Kimberley, and was mentioned in dispatches. When the present war broke out he was Deputy Director General of Military Works at Simla, India, and was transferred to the headquarters of the British Expeditionary Force in France as Colonel and temporary Brigadier General. In Feb., 1915, while acting as Chief Engineer Officer of the Indian forces on active service in the neighborhood of Ypres and La Bassee, he was made a Companion of the Bath.

Lake and Rail Rate Cancellations Case.—The Interstate Commerce Commission has decided that a carrier operating exclusively in Canada cannot be required to maintain joint arrangements with domestic carriers for the transportation of traffic from and to points in the United States. It vacated an order of suspension directed aagainst a schedule filed by the Grand Trunk Ry. canceling joint rates with the Northwestern Steamship Co. and eastern trunk lines on traffic from Lake Superior ports.

Demurrage Rules and Coal Supply.

Judging from the opposition to the proposed revision of the existing car demurrage rules, applicable to Canada, at a hearing of the Board of Railway Commissioners recently, railway officials state that it is evident that the consignees of traffic coming from United States points, particularly coal, do not realize how acute is the situation which exists in car supply and transportation. The car shortage on railways which are members of the American Railway Association, on Feb. 1, 1917, totalled 109,988 cars; on Mar. 1, 130,082; on April 1, 144,797; and on May 1, 145,449, showing a rapidly increasing shortage, and with the United States now getting down to war work in earnest, the transportation problems will become more pressing and the car shortage more intense.

Canada's coal supply, at present, is entirely dependent upon the car supply. One Canadian railway official states that his road could not get a pound of coal unless it sent its own cars for it. With the demand increasing in their own territory it is only natural to expect that the U.S. railroads will, as far as possible, confine their cars to their own country, where they state that they are able to get better service out of them than by allowing them to come into Canada, where the demurrage rules are such as to reduce rather than increase car efficiency.

The present Canadian rules were framed in 1906. They may have suited the conditions which prevailed at that time, but they are undoubtedly not suited to meet present day conditions. It is claimed that consignees in Canada have three times the length of free time to unload cars before any charge is involved, compared with what is allowed in the U.S., where the demurrage rate is $2 a day for each of the first five days and $5 a day for the sixth and each succeeding day, whereas in Canada the old 1906 code of $1 a day, after a much longer free time, still prevails.

The shipping public, in their own interest, should not oppose the proposed changes, as if the rules are not changed, and the U.S. railways, for this reason, decline to allow their cars to come into Canada with coal and other commodities, and Canadian railways are unable to provide equipment to take care of traffic offered, Canadian railways will feel that they are not wholly responsible, from a transportation point of view, for any shortage of cars and possible scarcity of coal in Canada next autumn and winter.

J. E. Dalrymple on Car Shortage and Demurrage Rates.

Representatives of various boards of trade and the railway companies are to meet in Ottawa on July 3, to outline a plan for revising the existing car demurrage rules. If an agreement can be reached the Board of Railway Commissioners will be asked to ratify the new regulations immediately. tI is felt that if the present rules are not changed car shortage will become more acute month by month.

In this connection, J. E. Dalrymple, Vice President, G.T.R., said recently: "The public should have a clear realization of what is aimed at in the revision of the demurrage rules. The situation is unprecedented. In every territory on the continent there is a demand for cars that cannot be fully met. It is useless to look to car builders for relief. They have more work than they can handle. If the situation is to be improved, or at least prevented from becoming more serious, there must be the greatest possible cooperation between the shippers, the consignees and the railways. Every car available must be kept moving and every car must be loaded to its capacity. That is, without doubt, the only way out of the present difficulties. Any measures that may be adopted to prevent the undue holding of cars for loading and unloading will, therefore, be of national advantage. Rules that were probably equitable under normal conditions are today hampering the efficiency of transportation.

"The Canadian coal supply will be largely controlled by the number of cars available. The railways have exceptional opportunities for knowing just how serious the fuel problem is. No Canadian coal can be obtained for our use. Supplies of Nova Scotia coal hitherto entering on our line at Montreal and Portland can no longer be procured, and as we can only get a limited quantity through Depot Harbor, and through Midland, Ont., we are obliged to rail our coal from the Pennsylvania mines. Not only are we obliged to do that, but we have to send our own cars down there for service between the mines and tidewater on the lakes, that is to furnish foreign roads with G.T.R. equipment.

"The increased mileage we are called upon to perform, by reason of this abnormal condition, at the four points mentioned, is equal to 132,406,000 ton miles. The extra service the G.T.R. will be called upon to perform this year, over and above the increased cost of $5,000,000 on the purchase of coal, is equal to one freight train a day for 330 days between Montreal and Toronto. That is the situation as regards railway fuel. If the railways cannot muster sufficient cars to keep a supply of coal on their lines for locomotive purposes their operation will be interfered with, and that would be a national calamity at the present time. Precisely similar difficulties face the country in connection with a general fuel supply for commercial and household purposes.

"Every available car must be used to the fullest advantage, and no individual is entitled, at this critical period, to hold a car for a day or for an hour when it might be released. It is the duty of every user of coal to obtain his winter supply, as far as possible, immediately, and not wait until bad weather comes along, bringing with it transportation difficulties and the always pressing demand for fuel. Surely this is a time for mutual effort and board cooperation. New demurrage rules will help to bring pressure to bear upon the delinquents who selfishly hold up cars and thereby hurt every other shipper. With all cars loaded to rated capacity and every car kept on the move, as far as practicable, the facilities at the disposal of the nation's business will give a good account of themselves."

Canadian Kelp Products, Ltd., has been organized in Vancouver, to manufacture potash from kelp, and has established a plant at Sydney, B.C., where three large rotary driers have been installed, capable of handling 150 tons of kelp a day. Operations will be commenced immediately and shipments will be made to eastern points. A. R. Mann, and A. C. Mackenzie, of the Northern Construction Co., Ltd., are President and Vice President, respectively, the other directors being C. V. Cummings, Secretary Treasurer, J. M. Fahey, Manager, and C. D. Burdock.

Railway Development, Projected Lines, Surveys, Construction Betterments, Etc.

Alberta & Great Waterways Ry.—J. D. McArthur, President, returned to Edmonton, Alta., June 11, after a trip over the line. The work to be completed during this year is the finishing of the line into McMurray. This will include ballasting, station building, etc. He is reported to have stated that it was expected to have the line opened up for through traffic from Edmonton to McMurray by Oct. 1. (May, pg. 193.)

Cedars, Limited, is opening up logging operations on its timber properties on the eastern side of Lynn Creek, near Vancouver, B.C. It is grading for 3.5 miles, from the site of the sawmill near the terminus, a B. C. Electric Ry. line. The line will cross Lynn Creek to the west side, a short distance south of the city waterworks intake, and will follow the west side of the creek, passing within a few feet of the caretaker's house, for about 3.5 miles up stream. Eventually, it is the company's intention to extend it a mile up the east fork of the creek, but this will not be undertaken until the timber is taken out en route.

The **Dolly Varden Mines Co.,** which has power to build a railway in British Columbia, has named L. W. Patmore, barrister, Prince Rupert, as its attorney.

Grand Trunk Pacific Ry.—The Brandon, Man., City Council at a recent meeting expressed regret that the Dominion Parliament had not seen it way clear to compel the company to complete the extension of the Hartney-Brandon line into the city at once. Parliament has approved of an extension of time for three years for the completion of this and other branch lines authorized to be built.

The Brandon City Council has asked the company to arrange with the C.P.R. for the installation of equipment for the exchange of freight between the two railways at a point between Forest and Varcoe, at which the C.P.R. Rapid City line crosses the G.T.P.R. main line.

The laying of track on the line from Young into Prince Albert, Sask., has been completed. The branch, which is 110 miles long, starts from the main line at Young, 422 miles from Winnipeg. The branch has been in operation to the Saskatchewan River, 78 miles, for about four years; the bridge across the river, 1,400 ft. long, was completed and track laid over it in 1915, and the grading to Prince Albert was practically completed in the same year. The extension now completed is about 29 miles. (June, pg. 224.)

Grand Trunk Ry.—Representatives of the G.T.R. and the city council met in Brantford, Ont., June 7 and 8, to discuss details in connection with the St. Paul's Ave. subway and other allied matters. The city's propositions, which were discussed, and upon which the company's head office will pornounce, are: That the city waive insistence on the building by the G.T.R. of the Holmedale spur and the Eagle Place switches, and the maintenance of the Colborne St. station as a station and as a stop; that the G.T.R. convey to the city the extension of Clarence St., 66 ft. wide, south through the G.T.R.; that the G.T.R. convey to the city property to enable the city to extend Northumberland St. westerly to the line of Clarence St.; that the G.T.R. assume the total cost of the St. Paul's Ave. subway as a roadway, as directed to be constructed by the Board of Railway Commissioners.

Great Northern Ry.—The new union station on the False Creek flats, Vancouver, erected by the G.N.R. for use jointly with the Northern Pacific Ry., was opened for public use, June 1. The first train into the station carried officials of the companies and other railway visitors. During the afternoon the general public were admitted to inspect the building. The first train out, which carried the railway officials, left at 4 p.m., and was followed by the first G.N.R. train at 7.30 p.m. The Northern Pacific Ry. instituted its service a few days later. The station is at present being used also by the Canadian Northern Ry., which obtains its entrance into Vancouver over the G.N.R. line, but which is building its own station.

Vancouver City Council has issued permits for the erection of the following additional terminal buildings on the False Creek site: Car repair shop, 20 x 60 ft.; coal house, 20 x 40 ft.; car carpet cleaning house, 16 x 60 ft. Grant, Smith & MacDonnell have the contract. (June, pg. 224.)

Intercolonial Ry.—Speaking at a farewell luncheon given in his honor by the Moncton City Club, May 26, F. P. Gutelius, formerly General Manager, Canadian Government Railways, reviewed the I.R.C. development under his management and prophesied that before many years there would be a four track, rock ballasted line between Halifax and the west through Moncton.

The Minister of Railways stated in the House of Comomns recently that rails for renewal purposes were required for the I.R.C., and that arrangement had been made with the Imperial Munitions Board to release sufficient steel to allow them to be rolled at Sydney, N.S. (June, pg. 224.)

The Minister of Railways stated in the House of Commons recently that the total cost of the renewal of the Perriac bridge, 81 ft. long, on the Fredericton division, was $9,009.28, which included $2,011.53 for improving the grade by raising the track. Thirty concrete piles, having a total length of 90 ft., were used, the cost being $1.04 a lineal foot delivered; labor cost $5,339.80, and a pile driver was used for 21 days on the work at a cost of $1.42 a day, which included fuel and labor.

The Minister of Railways stated in the House of Commons recently that the total area of land bought at Milford for ballast pit purposes was 74,898 acres, at a cost of $1,497.96. The pit was 3.58 miles from the main line, and land for right of way for a spur track was acquired for $958.50, the price of one small parcel of land still being unsettled. The cost of building the spur line was $38,061.01. There had already been 20,000 yd. of ballast taken from the pit, and the estimated quantity remaining was 1,700,000 yd. The ballast taken from the pit was used on the Halifax Ocean Terminals Ry., on the main line and on the spur leading to the pit. The rails on the spur line had been temporarily taken up to lay in sidings, to release National Transcontinental Ry. rails for shipment to France.

Tenders were received to June 29 for the construction of bridge substructures and concrete culverts on the Sydney and Mulgrave subdivisions.

Lacombe & Blindman Valley Electric Ry.—Track laying on the completed grade of this railway from Lacombe to Rimbey, Alta., was started at the end of May, and it was expected that rails would be laid as far as Gull Lake by June 30. Men are at work on the right of way, clearing up the graded portion, finishing up the grading, putting in culverts and laying ties. It is hoped that the entire line will be completed by the autumn. This is a light railway, and although it was originally proposed to use electricity as a motive power, it will be operated by steam. (June, pg. 224.)

Michigan Central Rd.—Work is reported to be in progress upon what will be virtually a reconstruction of the company's bridge at Niagara Falls. The present cantilever bridge was erected in 1883 and was strengthened and improved in 1899. (May, pg. 194.)

Pacific Great Eastern Ry.—The Premier of British Columbia returned to Voctoria, June 15, after having made a trip of inspection over the line from Squamish to Clinton, 120 miles. He gave out the following statement: "The general condition of the road is that the grade is substantial enough from Squamish to Clinton, but the side slopes are too steep in many places, and there is a great deal of loose overhanging rock which should be removed. The road needs a heavy coat of ballast and lining up. East of Clinton ties and rails are laid for some distance, but there is no ballast. From there most of the grading is done, and some bridges are in along a distance of 20 miles or so. Further east the grading is done, but in a number of places that came under my observation the slopes of cuts are too steep, and a good deal of stuff has slipped down on the grade. Near Quesnel, what is known as the 'big slide' is continuously shifting, as it has been for the past 25 years at that point ,and has carried the grade down twice already. It is still going and the grade is down the hillside 12 or 15 ft. below the level. I looked into the situation at Quesnel very carefully. There are absolutely no engineering difficulties in the way of taking the line into the town. It means lengthening the line somewhat in order to swing over the Quesnel River into the town and on the north a mile or two to a junction with the grade as constructed, but the increased cost of construction incidental to the diversion of the line can partly be offset by a large saving in the abolition of the necessity for the high level crossing of the Quesnel on the present route. This, on the location as laid out, calls for a bridge and trestlework 3,200 ft. long, while a bridge of probably 300 ft. would cross at the low level into the town. This can be so constructed as to serve the double purpose of a railway and a highway bridge, and thus effect a permanent saving in that way. I am very strongly of opinion that Quesnel will have to be connected with the railway, either by a diversion of the main line or by a spur, not so much on account of the town itself, as on account of the country lying west of the Fraser River. The river is navigable from Soda Creek to Prince George, there is an excellent country on the west side, and for the benefit of the settlers we must bring the railway as close to them as possible, by bringing about a connection between it and the river steamboats at Quesnel." (May, pg. 194.)

Quebec & Saguenay Ry.—The Minister of Railways stated in the House of Com-

mons recently that the length of the Q. & S.R., from Ste. Anne de Beaupre, Que., eastward, was 65 miles, on which 13.5 miles of track had been laid. It is proposed to lay track on the remainder of the mileage as soon as the rails are available. (June, pg. 24.)

Red Deer Valley Ry. — The Alberta Legislature incorporated a company with this title to build a railway in the upper part of the Red Deer River valley.

St. John & Quebec Ry.—The New Brunswick Government is having a new investigation made into the cost of the construction of the section of this railway between Centreville and Gagetown, and into the letting of the contract for the building of the Gagetown-Westfield section, which contains a stipulation that the contractors may be called upon to build the Centreville-Andover section at the same prices. This contract is held by the Nova Scotia Construction Co., of which T. Cozzolino is President, and G. H. Lindsay is Vice President and General Manager. The first of these contracts was signed in May, 1916, but prior to the elections in Feb., 1917, the then government entered into a new contract with the Nova Scotia Construction Co. for the building of the Centreville-Andover section at enhanced prices, estimated to add $77,000 to the cost of the line.

The Minister of Railways stated in the House of Commons recently that the department had not taken any steps since April, 1916, with reference to the proposal to build a bridge across the St. John River at Andover in connection with the railway, and that it is not intended to do anything in connection with the matter this year. (June, pg. 194.)

Toronto, Hamilton & Buffalo Ry.—A press report states that the company has secured 53 acres of land at the western boundary of Bridgeburg, Ont., which is to be utilized as a freight yard, and that the laying out of it will be started early in July. The company at present transfers its freight for Bridgeburg to the Michigan Central Rd. at Welland. It is stated that a spur will be built from the M.C.R. to connect with the new freight yard and that running rights will be obtained by the company over the M.C.R. between Welland and Bridgeburg. An official of the company is reported to have stated, June 14, that the matter was being given serious consideration, but that no decision had been reached. (June, pg. 225.)

The Summer Time or Daylight Saving Act.

The following is the full text of bill 82 as introduced in the House of Commons by Sir George Foster.

1. This Act may be cited as The Summer Time Act, 1917.

2. During the prescribed period in each year in which this act is in force, the time, for general purposes in Canada, shall be one hour in advance of the solar mean time.

3. This act shall be in force in each year during such time as may be prescribed by the Governor in council.

4. Wherever any expression of time occurs in any statute, order in council, order, regulation, rule or bylaw or in any deed, timetable, notice, advertisement or other document, the fixing of the time with respect to which is within the legislative jurisdiction of the Parliament of Canada, the time mentioned or referred to shall be held, during the prescribed period, to be the time as fixed by this act. Provided, that where, in consequence of this act, it is expedient that any time fixed by any bylaw, regulation or other instrument should be adjusted, and such adjustment cannot be effected except after the lapse of a certain interval or on compliance with certain conditions, the Governor in council may, on the application of the body or person by whom the bylaw, regulation or other instrument was made or is administered, make such adjustment from the time so fixed as in the circumstances may seem to the Governor in council proper.

5. The Board of Railway Commissioners for Canada shall have power to advance by one hour the standard time used by railway companies in Canada for such period as may be prescribed by the said Board, and to make such other orders as may be necessary for the convenient carrying out of the provisions of this act in so far as railway companies may be affected thereby.

Canadian Northern Railway Construction, Betterments, Etc.

Mount Royal Tunnel & Terminal Co.—The important work in progress in Montreal in connection with the building of the temporary station for the C.N.R. system is making satisfactory progress. The work involves the excavation of 250,000 cu. yd. of material near to Dorchester, St. Monique, Cathcart and Lagauchetiere Sts. This excavation is about 50 ft. deep, 250 ft. wide from side to side at the top, and about 1,200 ft. long from Cathcart to Lagauchetiere St. A feature of the excavation will be the bridge or viaduct carrying Dorchester St. across, which will be 165 ft. long and 64 ft. wide. It will be of concrete and steel and will be erected in two sections, the northern half towards Cathcart St., 32 ft. wide, being built first. Shafts 50 ft. deep have been sunk for the steel columns which will carry the girders, and when these are in place the work on the other half of 32 ft. width will be started. This method of erecting the bridge was adopted in order to prevent any interruption of traffic. From this bridge it will be possible to overlook the platforms and the terminal tracks up to the temporary station at Lagauchetiere and St. Monique Sts. on the one side, and towards the mouth of the tunnel under Mount Royal on the other.

The International Bridge & Terminal Co. is making application to the Board of Railway Commissioners for approval of the plan, profile and book of reference of its branch line from its tracks at the northern end of its bridge to the Shevlin Clarke mills. This is the link which will give connection between the company's projected Toronto-Hamilton-Niagara line and lines in the U.S.

Western Division.—Track laying on the line from Oliver to St. Paul de Metis is reported to be making satisfactory progress the track layers being reported to have reached mile 40 on June 14.

A ballast pit has been opened at Camrose, Alta., and gravel trains are being operated in various directions carrying material for the ballasting of the main line and branches in northern Alberta.

The company is reported to have plans prepared for the erection of a large station at Alberta Beach, 42 miles west of Alberta on the main line. It is also planning to carry out a number of improvements at that point to add to its attractiveness as a summer resort.

Pacific Division.—W. E. Siler arrived at Port Mann, B.C., June 10, from Toronto, in connection with the starting of work in the car shops there. He is reported to have said that 100 men are to be employed.

The erection of the company's station on the False Creek flats, Vancouver, is proceeding rapidly. The foundation work was completed some time ago, and at June 14, the basement had been finished, nearly all the concrete for the ground floor put in, and a considerable quantity of the steel frame work for the first floor put in place. Those in charge of the work are reported to have said that the progress was sufficiently forward to warrant the expectation that the building will be ready for opening by Jan. 1, 1918.

Vancouver Island.—We are officially advised that the bridge erected over Selkirk Water, Victoria, B.C., consists of timber trestle work on either side of the navigable channel. Part of this trestle work will be filled in and other parts will be replaced by steel and concrete within 8 years. This work will probably consist of 80 to 85 ft. girders on concrete piers. The navigable channel is crossed by a rolling lift bridge having a clear opening of 70 ft. The piers are being constructed by sinking open caissons with a jet, the interior of the caisson is then excavated by pump to the desired depth when piling is driven and the bottom of caisson is sealed with concrete. Each caisson is then pumped out and braced and the usual pier is erected on the foundation thus obtained. The driving of piles and the sealing of caissons has been completed in the larger pier and work on the other pier is practically completed. The erection of the steel superstructure is expected to be started early in July. (June, pg. 233.)

Ways of Increasing Freight Car Efficiency.

The U. S. Department of Commerce issued some letters to chambers of commerce and other commercial organizations urging the co-operation of the individual members for the purpose of releasing freight cars and increasing the amount of utility each car can be counted upon for. A flood of answers from organizations and individuals came in, and to these a second set of instructions was sent, designating just how this co-operation may be more effective. These suggestions rae: Unloading promptly of all loaded cars received; to load promptly all outgoing cars and release them immediately to the railways; anticipate the disposition of freight before its arrival; do not order special types of cars when ordinary types will serve; eliminate the use of railway equipment in trap or tramp cars when the tonnage can be handled by motor truck or wagons; load all cars to their full carrying capacity, so that the maximum use of each car will be obtained.

The Dominion Railway & Plaster Co. was incorporated under the Nova Scotia Companies Act with power to build railways in connection with the development of certain mining properties. The company does not appear to have secured legislative authority to build any railways or to have become a live organization. It failed to pay its annual registration fee on Jan. 1, consequently the Registrar of Joint Stock Companies on April 25 revoked its license to do business.

The Canadian Pacific Railway's Honor Roll.

In addition to list 23, published on pg. 258 of this issue, we have received list 24, issued June 15, which brings the number of the company's officials and employes on active service, shown in the casualty lists, up to 1,309, of whom 404 have been killed and 905 wounded. As particulars of army reservists are not available, the lists of those who have given up their lives for their country, or been wounded in action, are necessarily incomplete and do not indicate fully the extent to which the company's officials and employes are participating in the great struggle. List 24 is as follows:

Allin, Harold J., sectionman, McGaw, wounded.

Barnett, James, car repairer, Regina, wounded; Bates, George, car repairer, Winnipeg, wounded; Baugh, Charles Wallace, locomotive fireman, Montreal, gassed; Brown, John Thomas, section foreman, Woodhouse, wounded; Brumby, Arthur, clerk, Calgary, killed in action; Burke, William, wiper, Farron, wounded.

Cadieux, Owen, conductor, Chapleau, wounded; Callow, William Alfred, checker, Port McNicoll, wounded; Cameron, James, clerk, Winnipeg, killed in action; Campbell, Albert Fraser, caller, Lambton, wounded; Candy, Edgar Percy, wiper, Rogers Pass, wounded; Cooke, William George, clerk, Montreal, killed in action; Crosby, Isaac Stanley, stenographer, Moose Jaw, wounded.

Davenport, James, wiper, Field, killed in action; Davis, Wilfred, inspector, Toronto, wounded; Drysdale, John A., accountant, Winnipeg, wounded; Duncan, Ralph C., cleaner, Toronto, wounded; Dunn, Harold W., clerk, Montreal, wounded.

Eadle, George, helper, Angus, died of wounds; Eaglesfield, Herbert J., timekeeper, Montreal, died of wounds; Ellis, Samuel, cleaner, Winnipeg, wounded; Evans, Thomas, waiter, Sicamous, wounded.

Farley, William, car repairer, Schreiber, believed killed; Farmer, Albert Styles, stower, Ottawa, wounded; Farthing, Arthur, car repairer, West Toronto, wounded; Fletcher, Henry Arthur, clerk, Calgary. killed in action; Flett, Lester Medley, operator, Ignace, wounded; Freeborn, Earle Johnson, operator, Pardee, wounded.

Gale, Arthur William, clerk, Montreal, wounded; Gamble, James Guy, helper, Winnipeg, wounded; Gardner, Herbert L., brakeman, Chapleau, believed killed; Geissler, Charles R., clerk, London, wounded; Geolot, Alfred Wallace, waiter, Montreal, died of wounds; Gibbons, Lancelot J., section foreman, Grafton, wounded; Grafftey, William A., transitman, Montreal, wounded.

Halliday, William C., locomotive fireman, Kenora, wounded; Hardwicke, Charles E., clerk, Peterborough, wounded; Haskell, Charles S., checker, Saskatoon, presumed dead; Hetherington, Frank H., locomotive foreman, White River, wounded; Holmes, William Jackson, locomotive fireman, East Calgary, wounded; Humphrey, Ivor Percy, carpenter, Lethbridge, wounded; Hutchinson, David, wiper, Strathmore, wounded.

Innes, John, apprentice, Montreal, killed in action.

Jackson, Gavin Hamilton, clerk, Montreal, wounded; Jackson, George Olaf, storekeeper, Fort William, died of wounds; James, Harold Douglas, cleaner, Regina, wounded.

Kedge, Frederick George, locomotive fireman, Fort William, wounded; Kennedy, Robert L., sleeping car conductor, Montreal, wounded.

Lake, Gerald, clerk, Wolseley, wounded; Lawrence, Edward Albert, apprentice, Montreal, wounded; Ledbury, Benjamin, sectionman, Tillsonburg, died of wounds; Loup, Alexander George, locomotive man, Montreal, killed in action.

Macdonald, Hugh Stewart, wiper, Medicine Hat, died of wounds; McShane, James, locomotive fireman, Smiths Falls, killed in action; Manley, Reginald James, upholsterer, Ogden, killed in action; Manlove, Stanley H., clerk, Toronto, wounded; Marshall, Robert, locomotive fireman, Fort William, believed killed; Mathison, Albert, craneman, British Columbia Dist., killed in action; Merrikin, George, brakeman, Minnedosa, wounded; Moore, Frank C., apprentice, Montreal, wounded; Morley, Edwin, wiper, Sutherland, presumed dead; Murray, William V., porter, Winnipeg, killed in action; Myles, William Thomas, tuber, Ignace, wounded.

Nairn, Robert George G., rodman, Manitoba District, wounded; Neighbour, Henry, storeman, Winnipeg, wounded; Nickles, Joseph William, trainman, Brandon, presumed dead; Nurrish, James, checker, Toronto, wounded.

O'Toole, Frank, bridgeman, Medicine Hat, wounded; Oldfield, Kenneth, trucker, Toronto, wounded.

Paget, Bruce, bellman, Victoria, wounded; Pascoe, Henry Aitken, clerk, Winnipeg, wounded; Philp, Alexander, helper, Ogden, wounded; Prior, Percy Douglas T., apprentice, Winnipeg, died of wounds.

Rainey, James, porter, Winnipeg, killed in action; Rayton, Richard, helper, Ogden, wounded; Reynolds, George Roger, clerk, Cardston, wounded; Robson, William, helper, Winnipeg, died of wounds; Russell, William, brakeman, Souris, wounded; Ryan, Michael J., yardman, Montreal, wounded.

Sharp, Allison E., watchman, Woodstock, N.B., wounded; Shaw, John, clerk, Winnipeg, wounded; Snodgrass, William, carpenter, Moose Jaw, wounded; Symmers, Alexander, clerk, Montreal, wounded.

Taylor, Thomas Barr, clerk, Montreal, wounded; Tesquet, Jean, cook, Victoria, killed in action; Thew, Christopher, watchman, Cobourg, wounded; Thornton, Albert, helper, Fort William, wounded; Tyler, Thomas Alexander, locomotive man, North Bay, wounded and prisoner.

Upex, Percy, checker, Moose Jaw, killed in action.

Vipond, Howard Cameron, operator, Ignace, wounded.

Walton, William B., clerk, Montreal, killed; Wellspring, William, locomotive fireman, British Columbia Dist., killed in action; Wragg, Herbert, porter, Calgary, killed in action; Wynne, Cyril Brenden, stenographer, Montreal, believed killed.

The following casualties to members of the European staff on active service have European staff on active service have been reported: Caird, Alexander Peter, clerk, London, wounded; Evans, George James, clerk, London, wounded; Caryl, Albert Edward, packer, Liverpool, killed in action; McArthur, William B., typist, London, killed in action.

There have been shown on honor lists to date: killed 404, wounded 905, total 1,309.

The Pacific Great Eastern Railway Investigation.

The British Columbia Legislature has added the following section to the Public Enquiries Act: "Whenever the Lieutenant-Governor in council deems it expedient to cause enquiry to be made into and concerning any matter relating to the election of any member of the legislative assembly, past or present, or into and concerning any matter connected with the good government of the province, or the conduct of any part of the public business thereof, including all matters municipal or the administration of justice therein, or into payments or contributions for campaign or political purposes, or for the purpose of obtaining legislation, or obtaining influence and support for franchises, charters or any other rights or privileges, from the legislature or government of the province by any person or corporation or by any of the promoters, directors, or contractors, of such corporation, or by any other person in any way connected with, representing, or acting for or on behalf of such corporation or any of such promoters, directors, or contractors, the Lieutenant-Governor in council may by commission intituled in the matter of this act, and issued under the great seal, appoint commissioners or a sole commissioner to enquire into such matters."

One of the reasons for the passing of the measure which includes the above section, was the refusal of various witnesses at the investigation into the affairs of the Pacific Great Eastern Ry. recently to answer questions as to certain sum which it was suggested may have been used as campaign funds by one or other of the political parties. Under sec. 12 of the act any witness refusing to be sworn, to answer questions, to produce documents or books or papers, shall be held to be guilty of contempt, and the commissioners holding the enquiry may deal with exactly as if they were judges of the Supreme Court, and all sheriffs and other functionaries are directed to give their aid and assistance to the commissioners in the execution of their office.

Prior to an adjournment to Aug. 14, the legislature negatived a motion to call Hon. W. J. Bowser, leader of the opposition, and former premier, to the bar of the House for refusing to answer questions at the recent inquiry. The House also released from the custody of the sergeant at arms R. D. Thomas, Secretary of the Pacific Great Eastern Ry., who had persisted in refusing before the legislature to answer questions he had refused to answer to the committee of enquiry. Mr. Thomas went to Chicago, June 1, but stated that he would return before the session reopened in August.

A motion submitted to the house to take over the entire P.G.E.R. property; to bring action against the contractors and others for the recovery of funds overpaid ;to provide for the completion of the line; to provide for its operation as a government undertaking, and to apply for a Dominion subsidy, was ruled out of order.

The Bill to Amend the Ontario Railway and Municipal Board Act by increasing the Chairman, Vice Chairman and Secretary's salaries and by providing a penalty of $1,000 in addition to any other penalty imposed by the act for neglect to obey the board's orders, was dropped during the Ontario Legislature's last session.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 189. May 23.—Amending Rule 3 of Canadian Freight Classification 16, re minimum and maximum loading of freight cars. This order is given in full on another page.

General order 190. May 25.—Amending Canadian Freight Classification 16, re rating and minimum loading of ice cream cones. This order is given in full on another page.

General order 191. May 26.—Amending Rule 23 of Regulations Governing Baggage Car Traffic in Canada by providing that immigrant baggage be stored free for not exceeding five days after arrival at Montreal, Toronto and Winnipeg. This order is given in full on another page.

General Order 192. May 30.—Dismissing application of Canadian Manufacturers' Association for order disallowing charges made by railway companies for salt supplied to refrigerator cars with ice. This order is given fully on another page.

General order 193. May 31.—Approving Supplement 9 to Canadian Freight Classification 16, re ratings and minimum weights for games or toys, etc. This order is given fully on another page.

General order 194. June 6.—Authorizing express companies subject to Board's jurisdiction to amend Express Classification for Canada to increase weight upon which express charges for carriage of horses are based from 10,000 to 12,000 lbs. a carload.

26129. May 21.—Ordering Kettle Valley Ry. to fence portions of its right of way between Glenfir and Chute Lake, east of Penticton, B.C.

26130. May 21.—Authorozing C.P.R. to build spur to Dominion Government wharf at Vancouver, B.C.

26131. May 21.—Extending to July 1 time within which C.P.R. may build diversion of highway at Sagwa, N.B.

26132. May 18.—Authorizing Rougemont Municipality, Que., to divert highway and crossing over Quebec, Montreal & Southern Ry., at Grande Caroline road, maintenance of crossing to be paid by company.

26133. May 21.—Authorizing G.T.R. to build spur for William Kennedy & Sons, Ltd., Collingwood, Ont.

26134. May 22.—Approving agreement between Western Canada Telephone Co., of Vancouver, B.C., and British Columbia Telephone Co., Dec. 1, 1916.

26135. May 21.—Authorizing C.P.R. to build three spurs for Three Rivers Steel Foundry Co., Three Rivers, Que.

26136. May 22.—Approving Moncton & Buctouche Ry. standard freight mileage tariff, C.R.C. 25, and rescinding order 25737, Dec. 20, 1916, approving its C.R.C. 23.

26137. May 22.—Authorizing C.P.R. to remove station agent at Domain, Man., agent to be reappointed for Sept., Oct., Nov. and Dec., in each year.

26138, 26139. May 23.—Approving agreements between Bell Telephone Co. and British American Nickel Corporation, Sudbury District, Ont., May 15, and St. Vincent Tp., Grey County, Ont., May 9.

26140. May 22.—Ordering C.P.R. to build standard 2 station at Hayter, Alta., by Aug. 1, 1918, meantime present portable building, except portion occupied as office, to be used as a waiting room; foundation to be boarded up or banked, to keep station warm, and entire box car body to be used as freight shed only.

26141. May 23.—Extending for three months from date time within which St. Martins Ry. shall repair bridges and do other work required hy order 25865, Feh. 14.

26142. May 25.—Ordering that cost of building and maintaining crossing of Depew St. by G.T.R., Hamilton, Ont., be paid by city.

26143. May 23.—Ordering C.P.R. to erect standard 6 station, containing waiting room and freight shed, with platform 100 ft. long, at Enterprise, Ont., building to be heated in winter and lighted when necessary; C.P.R. also to erect a 2-pen stock yard with loading pen and chute and provide roadway to team track wide enough for wagon to turn; work to be completed by Sept. 1.

26144. May 23.—Extending to Aug. 15 time within which C.P.R. may complete siding and loading platform facilities on its Moose Jaw Northwesterly Branch, 2 miles west of South Saskatchewan River, as required by order 25617, Nov. 9, 1916.

26145. May 26.—Authorizing G.T.R. to use bridge 290, over Pine River, Essa Tp., Ont., authorized by order 25890.

26146. May 26.—Authorizing Brantford & Hamilton Electric Ry. to use bridge over Toronto, Hamilton & Buffalo Ry., near Cainsville, Ont.

26147. May 28.—Authorizing City of Montreal to build new subway on St. Denis St., under C.P.R.

26148. May 25.—Authorizing City of Montreal to build temporary crossing over C.P.R. at Melrose Ave., for pedestrian traffic, to be protected by watchmen from 7 a.m. to 11 p.m., wages to be paid by city.

26149. May 28.—Relieving G.T.R. from providing further protection at first public crossing south of Brantford, Ont.

26150. May 28.—Ordering C.P.R. to erect new station at Tramping Lake, Sask., by Jan. 1, 1918; pending erection company to take down partition between small living room and other part of structure and provide new sheeting for box car body used as freight warehouse, paint structure standard color, make interior tidy, remove coal altogether from car and provide coal bin.

26151. May 28.—Amending order 25772, Jan. 3, re building of tunnel under Calgary & Edmonton Ry. by A. D. McCormack, Casper, Alta.

26152. May 28.—Ordering that crossing of C.P.R. and Canadian Northern Ry. at Trenton, Ont., be protected by half interlocking plant; derails be placed on C.P.R.; home signals on both lines; derails be interlocked with home signals; plant be operated by C.P.R. trainmen, which company pays whole cost.

26153. May 28.—Authorizing G.T.R. to rebuild bridge 56, over public road near Rymal, Ont., and rescinding order 26098, May 10.

26154. May 29.—Authorizing C.P.R. to build three spurs for Mack Brick Co., St. Constant Parish, Que.

26155. May 29.—Authorizing C.P.R. to build passing siding at grade across road allowance at mileage 28.6, Oshawa Subdivision, Hamilton Tp., Ont.

26156. May 29.—Ordering Grand Trunk Pacific Ry. to erect standard A station at Quinton, Sask., by Sept. 1.

26157. May 28.—Relieving Canadian Northern Quebec Ry. from providing further protection at crossing of public highway, continuation of Notre Dame St., Bout de l'Isle.

26158. May 11.—Ordering C.P.R. to enlarge freight shed at Lesage, Que., to not less than 25 x 15 ft. inside, work to be completed by Aug. 1.

26159. May 28.—Ordering Grand Trunk Pacific Ry. to keep station buildings at Kitwanga, Woodcock, Cedarvale and Doreen, B.C., open and heated for arrival of passenger trains; keep all l.c.l. or package freight shipments liable to damage from weather properly housed; place at least a box car body at Kitwanga and Cedarvale, by Sept. 1, for package freight other than perishable shipments, and to place stove in waiting room at Kitwanga and heat same.

26160. May 29.—Authorizing Alberta Ry. & Irrigation Co. and C.P.R. to divert portion of original road allowance between n.w. ¼ sec. 1 and n.e. ¼ sec. 2, Tp. 9, R. 21, west of 4th meridian, Alta.

26161. May 29.—Rescinding order 26077, May 2, re G.T.R. train service from Brantford to Tillsonburg, Ont.

26162. May 29.—Amending order 25991, April 5, re Canadian Northern Ry. spur for Canadian Cooperage Mfg. Co., South Crosby Tp., Ont.

26163. May 29.—Authorizing New York Central Rd. to rebuild bridge 43-A, near Northfield station, Ont.

26164. May 30.—Relieving G.T.R. from providing further protection at Browns Crossing, near Tara, Ont.

26165. May 30.—Authorizing Saskatchewan Government to build highway over east end of C.P.R. station grounds at Antler, Sask.

26166. May 30.—Ordering G.T.R. to erect passenger station at Orillia, Ont, to be completed by Oct. 1.

26167. May 31.—Approving Edmonton, Dunvegan and British Columbia Ry. form of live stock contract F-115.

26168. May 31.—Ordering Canadian Northern Ry. to publish joint tariff on canned goods in carloads, from and to points in Ontario, west of Ottawa, Peterborough and Whitby, to become effective by June 15.

26169, 26170. June 1.—Ordering C.P.R. to provide portable stations at Gouverneur, Sask., and Six Mile Creek, B.C., to be completed by Sept. 1.

26171. May 31.—Authorizing Canadian Northern Ry. to build spur for Atlas Coal Co., Drumheller, Alta.

26172. June 5.—Suspending, until further order tariffs advancing rates on grain and grain products filed to take effect June 5 and subsequent dates.

26173. May 30.—Relieving C.P.R. from providing further protection at crossing in Redvers, Sask.

26174. May 31.—Authorizing City of Hamilton, Ont., to build highway over Hamilton Radial Electric Ry. at Harvey St.

26175. June 1.—Ordering Canadian Northern Ry. to appoint grain agent at Fenn, Alta., from Sept. 15 to Dec. 31.

26176. June 2.—Authorizing Grand Trunk Pacific Branch Lines Co. to carry traffic over its Young to Prince Albert Branch, Sask., between mileage 87 and 111.8, Prince Albert, until Aug. 31; speed not to exceed 15 miles an hour.

26177. June 2.—Extending for two months from date time within which C.P.R. shall install bell at Duke St., Guelph, Ont., as per order 25786, Jan. 8.

26178. June 5.—Refusing City of Toronto's application for rehearing of application for order regulating use of steam whistles and ringing of bells on locomotives within city limits.

26179. June 5.—Ordering G.T.R. to install gates at Victoria St., Thamesville, Ont., to be operated by day and night watchmen; work to be completed by Sept. 1, 20% of cost to be paid out of railway grade crossing fund, 10% by Howard Tp., 15% by Thamesville, and 55% by G.T.R.; maintenance and operation to be paid, 10% by Howard Tp., 15% by Thamesville, and 75% by G.T.R.

26180. June 5.—Extending, for 30 days from date, time within which C.P.R. shall improve station facilities at Upper Kent, N.B.

26181. June 5.—Rescinding order 24976, May 15, 1916, providing for continuance of extra car service by G.T.R. at Jordan, Ont.

26182. June 5.—Authorizing Canadian Northern Ontario Ry. to connect with G.T.R. belt line at Don Esplanade, Queen St., Toronto.

26183. June 5.—Extending to Aug. 1, time within which C.P.R. shall install gates at crossing of Church St., Weston, Ont.

26184. June 5.—Authorizing Ottawa & New York Ry. and G.T.R. to refund to D. A. McPhee, Vankleek Hill, Ont., amount overcharged on shipment of a bull from Russell, Ont.

26185. June 5.—Approving Bell Telephone Co. agreement with Chippawa Hill Telephone Co., operating in Bruce County, Ont., May 15.

26186. June 5.—Ordering G.T.R. and Niagara, St. Catharines and Toronto Ry. to provide interswitching facilities at Thorold, Ont.

26187. May 31.—Ordering Michigan Central Rd. to refund demurrage charge of $23 on shipment of logs from Warren, Mich., to Tilbury, Ont.

26188. June 6.—Authorizing Canadian Northern Quebec Ry. to build two sidings for American Can Co., Maisonneuve, Que.

26189. June 7.—Extending for three months from date time within which G.T.R. shall build spur for International Harvester Co. of Canada, Hamilton, Ont., as per order 24801, Mar. 14, 1916.

26190. June 7.—Authorizing C.P.R. to build spur for James Richardson & Sons, at Port Arthur, Ont.

26191. June 7.—Authorizing C.P.R. to build sidings for Red Deer Board of Trade, Red Deer Grocery Co., Stephenson Bros., and Latimer & Botterill, Red Deer, Alta.

26192. June 5.—Ordering that crossing of Colborne St., Brantford, Ont., by Grand Valley Ry. and G.T.R. be protected to Board's satisfaction.

26193. June 6.—Ordering that cost of installing gates required by order 25633, Nov. 16, 1916, at Gravel Road, Morrisburg, Ont., be paid—20% out of railway grade crossing fund, 5% by Stormont, Dundas and Glengarry Counties, 5% by Williamsburg Tp., 5% by Morrisburg, and 65% by G.T.R. Maintenance—10% by Morrisburg; 10% by Williamsburg Tp., 10% by counties named and 75% by G.T.R., and rescinding order 7319, June 17, 1909.

26194. June 6.—Approving C.P.R. local freight tariff C.R.C. no. E-3299, showing rates on pedigreed live stock when shipped by Ontario Department of Agriculture's Live Stock Branch.

26195. June 6.—Authorizing City of Toronto to build double track street railway across G.T.R. by overhead trestle south of Eastern Ave.

26196. June 6.—Extending express companies' collection and delivery limits in Montreal for period of war only. The order is given more fully later on in this issue under Among the Express Companies.

26197. June 9.—Extending to Sept. 1, time within which half interlockers may be installed at crossings of Victoria Ave. and Franklin St., Fort William, Ont., conductors to flag cars over the crossings.

26198. June 8.—Authorizing G.T.R. to build spur for City of Hamilton.

26199. June 8.—Approving Toronto, Niagara & Western Ry. revised location through Trafalgar Tp., Ont., mileage 19.79 to 27.

26200. June 8.—Authorizing New York Central Rd. to connect Ottawa & New York Ry. with G.T.R. at Ottawa, Ont.

26201. June 5.—Authorizing Esquimalt & Nanaimo Ry. to build spur at mileage 0.16 into Songhees Indian Reserve, B.C.

26202. June 12.—Amending order 26148, May 25, re temporary crossing of C.P.R. at Melrose Ave., Montreal.

26203. June 11.—Rescinding order 25799, Jan. 12, suspending order 25752, Dec. 22, 1916, pending disposition of action against Mathias Range Aqueduct Co., by Quebec & Lake St. John Ry., to restrain it from building water pipe.

26204. June 11.—Approving plan of shelter or train shed over southerly tracks at G.T.R. Central Station, Ottawa.

26205. June 12.—Approving location of C.P.R. Standard A2 station at Carey, Man.

26206 to 26208. June 11.—Approving Bell Telephone Co. agreements with Northcote Farmers' Telephone Co., Renfrew Co., Ont., May 28, St. Marc Co-operative Telephone Association, Vercheres County, Que., May 27, and St. Sebastien d'Iberville Telephone Co., Iberville and Mississquoi Counties, Que., May 29.

26209. June 12.—Authorizing C.P.R. to build passing siding at grade across Hall St., Renfrew, Ont.

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Uniform Maintenance of Way Flagging Rules for Impassable Track.

The Board of Railway Commissioners passed general order 188, April 23, as follows: Re complaint of the Brotherhood of Locomotive Engineers alleging that the Canadian Pacific and the Canadian Northern Rys. have wilfully violated the flagging rules in force on their respective systems in the operation of trains in Western Canada; and applying for the adoption of certain regulations by the board, having in view the protection of railway employes. Upon reading the communications and submissions filed on behalf of certain of the railway companies interested, and the complaints, and the report and recommendation of the Chief Engineer and the Chief Operating Officer of the board, after a conference between the board's officers and representatives of the Grand Trunk, Grand Trunk Pacific, Canadian Pacific, Canadian Northern, and Toronto, Hamilton & Buffalo Railways, the Michigan Central, the complainants, the Brotherhood of Locomotive Firemen and Enginemen, the Brotherhood of Railroad Trainmen, the Order of Railroad Conductors, the Order of Railway Telegraphers, and the International Brotherhood of Maintenance of Way Employes held in Toronto, Aug. 4, 1916, upon notice to the parties in interest, and in pursuance of the powers conferred upon it under secs. 26, 30, 268 and 269 of The Railway Act, and of all other powers possessed by the board under the Act: It is ordered that the following regulations for the uniform maintenance of way flagging rules for impassable track, to become effective June 1, 1917, be prescribed for the observance of every railway company within the legislative authority of the Parliament of Canada:

1. Before undertaking any work which will render the track impassable, or if rendered impassable from any cause or defect, trackmen, bridgemen, or other employes of the company shall protect the same as follows:

2 (a). On double track; (b) on three or more tracks; (c) in mountain territory; and (d) on all lines with frequent or fast train service—Send out a flagman in each direction with stop signals, at least 1500 ft. in daytime, if there is no down grade towards the obstruction within one mile, and there is a clear view of 6,000 from an approaching train; 3,600 feet at other times and places, if there is no down grade towards the obstruction within one mile; 5,400 ft. if there is a down grade towards the obstruction within one mile. The flagman must, after going the required distance from the obstruction to ensure full protection, take up a position where there will be an unobstructed view of him from an approaching train of, if possible, 1,500 ft., first placing two torpedoes on the rail (not more than 200 nor less than 100 ft. apart), on the same side as the engineer of an approaching train, 300 ft. beyond such position. The flagman must display a red flag by day and a red light by night, and remain in such position until recalled or relieved.

3. On other lines, (a) By day place a red flag and, in addition, by night a red light, on the same side of the track as the engineer of an approaching train, at a point 600 ft. from the defective or working point, with two torpedoes placed on the rail opposite each other so as to cause but one explosion, 150 ft. in advance of the red signal, and provide further protection as follows: (b) By day place a red flag, supported on two staffs with flag drawn out between them at right angles to the track and 5 ft. above rail level; and, in addition, by night, a red light; on the same side of the track as the engineer of an approaching train so that it will be clearly in his view, at least 3,600 ft. from the defective or working point, if there is no down grade towards the obstruction; 5,400 ft. if there is a down grade within one mile of the obstruction, or as much farther as may be necessary to ensure full protection. (c) Place two torpedoes (not more than 200 nor less than 100 ft. apart) on the rail on the same side as the engineer of an approaching train, 300 ft. in advance of the red signal.

4. Trains stopped by flagman, as per rule 2, shall be governed by his instructions and proceed to the working point, and there be governed by signal or instructions of the foreman in charge.

5. Trains stopped by red signal, as per rule 3, shall replace the torpedoes exploded and proceed to the working point signal, and there be governed by signal or instructions of the foreman in charge, unless in the meantime stop signal had been removed.

6. In the event of train order protection being provided, the defective or working point may be marked by signals placed in both directions as follows: Yellow flags by day and in addition yellow lights by night, 3,600 ft. from the defective or working point; red flags by day, and in addition red lights by night, 600 ft. from the defective or working point, on the same side of the track as the engineer of an approaching train; except on double track, where trains run to left, in which case signals shall be placed to the left hand side as seen by an engineer of an approaching train, and there is a clear view of at least 1,200 ft.

7. When weather or other conditions obscure day signals, night signals must be used in addition.

And it is further ordered that the foregoing rules be printed in the working time tables of the said railway companies for the guidance of all employes. Subdivisions to be named, setting out which of the rules are applicable to each. Frequent service shall mean nine or more trains per diem. And it is further ordered that General Order 161, Feb. 23, 1916, made herein, be rescinded.

Acton Burrows, Managing Director, Canadian Railway and Marine World, has been unanimously re-elected Honorary Secretary-Treasurer of the Canadian Electric Railway Association for the eleventh consecutive year. He has also been unanimously re-elected chairman of the Canadian Press Association's Trade and Class Section, and a director of the Association, for the third consecutive year.

Railway Lands Patented.—Letters patent were issued during March covering Dominion railway lands in Manitoba, Saskatchewan, Alberta, and British Columbia, as follows:

	Acres.
Calgary and Edmonton Ry.	6,503.33
Canadian Northern Western Ry.	81.35
Qu'Appelle Long Lake and Saskatchewan Rd. and Steamboat Co.	1,742.38
Total	8,327.06

Transportation Appointments Throughout Canada.

Canadian Government Railways.—The Minister of Railways issued the following circuler June 1:—F. P. GUTELIUS has resigned from the position of General Manager of Canadian Government Railways to accept service with another railway. The Canadian Government Railways are divided by the River at Quebec into two operating divisions, to be designated as Canadian Government Railways, Eastern Lines, and Canadian Government Railways, Western Lines. C. A. HAYES is appointed General Manager, C.G.R., Eastern Lines. Office at Moncton, N.B. F. P. BRADY is appointed General Manager, C.G.R., Western Lines. Office at Winnipeg, Man.

The following circular was issued by C. A. Hayes and F. P. Brady, General Managers of Eastern Lines and Western Lines, respectively, June 1:—The following general officers are appointed, all lines: C. B. BROWN, Assistant General Manager Eastern Lines,—Chief Engineer. S. L. SHANNON, Comptroller and Treasurer. H. F. ALWARD, General Solicitor and General Claims Agent. D. A. STORY, Freight Traffic Manager, reporting to General Manager, Eastern Lines. H. H. MELANSON, Passenger Traffic Manager, reporting to General Manager, Eastern Lines. G. R. JOUGHINS, Superintendent of Rolling Stock. W. N. RIPPEY, Superintendent Car Service. Offices at Moncton, N.B.

J. H. NORTON has been appointed Division Freight Agent, Halifax, N.S., vice M. F. Tompkins, promoted.

E. H. MARTIN, heretofore Assistant Superintendent, has been appointed Superintendent, District 4, Intercolonial Division, vice L. S. Brown, promoted. Office, New Glasgow, N.S.

K. STEWART, heretofore Chief Dispatcher, New Glasgow, N.S., has been appointed Assistant Superintendent, District 4, Intercolonial Division. Office, New Glasgow, N.S.

A. T. WELDON, heretofore Asistant General Freight Agent, has been appointed General Freight Agent, vice D. A. Story, promoted. Office, Moncton, N.B.

M. F. TOMPKINS, heretofore Division Freight Agent, Halifax, N.S., has been appointed Assistant General Freight Agent, vice A. T. Weldon, promoted. Office, Moncton, N.B.

L. S. BROWN, heretofore Superintendent, District 4, Intercolonial Division, New Glasgow, N.S., has been appointed Assistant General Superintendent, Eastern Lines, and not Assistant to the General Superintendent, as was reported in our last issue. Office, Moncton, N.B.

J. C. BECKWITH, heretofore Engineer of Construction, has been appointed Division Engineer, vice H. T. Ruhl, resigned to enter Delaware & Hudson Co.'s service, and his former position has been abolished. Office, Moncton, N.B.

A. J. GRAY, heretofore Division Freight Agent, St. John, N.B., has been appointed Assistant General Freight Agent. Office, St. John, N.B.

W. A. COWAN, M.Can.Soc.C.E., heretofore Division Engineer, Transcontinental Division, Cochrane, Ont., has been appointed General Superintendent, Transcontinental Division, vice F. P. Brady, promoted. Office, Cochrane, Ont.

A. V. REDMOND, heretofore Resident Engineer, District 2, Transcontinental Division, Cochrane, Ont., has been appointed Division Engineer, Transcontinental Division, vice W. A. Cowan, promoted. Office, Cochrane, Ont.

A. H. WILLETT, heretofore Asistant Division Engineer Transcontinental Division, Cochrane, Ont., has been appointed Resident Engineer, District 2, Transcontinental Division, vice A. V. Redmond, promoted, and his former position has been abolished. Office, Cochrane, Ont.

J. H. DUFF has been appointed Assistant Superintendent, District 2, Transcontinental Division. Office, Grant, Ont.

Canadian Northern Ry.—A. S. DAVIS, heretofore Soliciting Passenger Agent, has been appointed Travelling Passenger Agent, Toronto.

A. W. JOBSON has been appointed Soliciting Passenger Agent, Toronto, vice A. S. Davis, promoted.

W. B. MARSHALL, heretofore Night Locomotive Foreman, has been appointed Locomotive Foreman, Humbolt, Sask., vice N. McLean, enlisted for active military service.

H. BAYLIS, heretofore machinist, Winnipeg, has been appointed Night Locomotive Foreman, Humbolt, Sask., vice W. B. Marshall, promoted.

F. G. FLESCHER is reported to have been appointed Locomotive Foreman, Lucerne, B.C., vice W. M. Armstrong, enlisted for active military service.

G. McLEAN, heretofore machinist, has been appointed Locomotive Foreman, Port Mann, B.C., vice T. Young, who has been appointed operator of the gas-electric car operated on Vancouver Island.

V. BATTLE has been appointed City Ticket Agent, Niagara Falls, N.Y.

Canadian Pacific Ry.—W. BLACK has been appointed Locomotive Foreman, McAdam Jct., N.B.

J. PRENDERGAST, heretofore Assistant Foreman, Glen Yard, Montreal, has been appointed Locomotive Foreman, Quebec, Que., vice W. J. Buckley, transferred.

A. E. PALMER has been appointed Locomotive Foreman, Sherbrooke, Que., vice E. Bowie, transferred.

W. J. BUCKLEY, Locomotive Foreman, Quebec, Que., has been appointed Locomotive Foreman, Glen Yard, Montreal, vice A. W. Lowe, resigned.

C. A. WHEELER, heretofore Locomotive Foreman, Smiths Falls, Ont., has been appointed Locomotive Foreman, North Bay, Ont., vice A. E. Palmer, transferred.

H. C. NELSON, heretofore draughtsman, District Engineer's office, North Bay, Ont., has been appointed Resident Engineer, Chapleau, Ont., vice A. O. Wolff, transferred.

K. D. JOSEPH, heretofore acting Trainsmaster, McAdam Jct., N.B., has been appointed Assistant Trainmaster, Sudbury, Ont.

JOHN LEE, heretofore locomotive draughtsman, is reported to have been appointed Shop Engineer, Winnipeg.

J. J. McDONELL has been appointed Chief Dispatcher, Saskatoon Division, Saskatchewan District, vice J. H. Scott. Office, Saskatoon.

W. L. CODINGTON, heretofore Resident Engineer, Revelstoke, B.C., has been appointed Resident Engineer, Vancouver, B.C., vice T. E. Price, on leave of absence for active military service.

A. G. BROOKER has been appointed City Ticket Agent, Chicago, Ill., vice G. H. Griffin transferred.

Agent, Chicago, Ill., has been appointed Travelling Passenger Agent, St. Louis, Mo.

S. E. CORBIN has been appointed City Passenger Agent, St. Louis, Mo.

Canadian Pacific Ocean Services.—W. STONE has been appointed General Agent, Passenger Department, Yokohama, Japan, vice G. M. Jackson, transferred.

J. R. SHAW, heretofore General Agent Passenger Department, Shanghai, China, has been appointed General Agent, Passenger Department, Hong Kong, China.

G. M. JACKSON, heretofore General Agent, Passenger Department, Yokohama, Japan, has been appointed General Agent, Passenger Department, Shanghai, vice J. R. Shaw, transferred.

Chicago and Northwestern Ry.—A press report states the office at Vancouver, B.C., operated heretofore as a branch of the Seattle, Wash. agency, under charge of E. A. Dye, Travelling Agent, has been made a separate agency, in charge of Mr. Dye, as General Agent for British Columbia.

Delaware and Hudson Co.—H. T. RUHL, Division Engineer, Canadian Government Railways, Moncton, N.B., is reported to have been appointed Engineer Maintenance of Way, D. & H. Co., Albany, N.Y.

Grand Trunk Pacific Ry.—D. ROBERTSON, formerly Storekeeper, Edmonton, Alta., has been appointed acting Storekeeper, Transcona, Man., vice W. G. Whiteley, who has resumed his former position as chief clerk there.

The following station agents have been been appointed, Balcarres, Sask., D. W. McMillan; Riverhurst, Sask., V. D. Sibbald.

Grand Trunk Ry.—Owing to Mrs. Chamberlin's serious illness, E. J. CHAMBERLIN, President, has been granted three months leave of absence, from June 14, in order that he may take her for an extended trip as soon as she is able to travel. The Chairman, A. W. Smithers, has appointed Vice President H. G. KELLEY to perform Mr. Chamberlin's duties during that period, and all communications for the President are to be addressed to Mr. Kelley.

J. L. BURNS has been appointed Chief Dispatcher, Richmond, Que., vice E. C. Potter.

The following station agents have been appointed: Peterborough, Ont., A. MacNab; King, Ont., A. M. Clarke; Lefroy, Ont., F. A. Tebo; Riverdale, Ont., A. G. Gulston; St. Paul's, Ont., C. A. Ober; Holstein, Ont., W. B. Rife; Whitehall, Ont., A. C. Ritza; Edgington, Ont., W. C. Hogan.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—H. T. DUFFY, heretofore District Passenger Agent, Moose Jaw, Sask., has been appointed General Agent, Toronto, vice F. A. Nancekivell, resigned to enter other business.

R. H. ZIEBELL has been appointed District Passenger Agent, Moose Jaw, Sask., vice H. T. Duffy, promoted.

Winnipeg Joint Terminals. — JAMES CLARK, heretofore Night Yardmaster, Canadian Northern Ry., Winnipeg, has been appointed General Yardmaster, Winnipeg Joint Terminals, vice W. McAuley, who has resumed his duties as switchman.

Railway Rolling Stock Notes.

The G.T.R. has ordered 10 locomotives from Canadian Locomotive Co., and 5 from American Locomotive Co.

The Timiskaming & Northern Ontario Ry. has received 2 conductors' cabooses from Preston Car & Coach Co.

Canadian Government Railways have bought 23 second hand Hart-Otis cars, 40 tons capacity, from F. H. Hopkins & Co.

The South African Government has ordered 20 mountain type locomotives, 22 x 26 in. cylinders, 175,000 lb. in working order, from American Locomotive Co.

The Canadian Locomotive Co. has shippe dto the British Government 18 consolidation locomotives, of the order of 40, mentioned in Canadian Railway and Marine World for February.

The Russian Governmnt has ordered 5,000 four-wheel freight cars, 1,200 poods capacity, from American Car and Foundry Co., and also 5,000 from Standard Steel Car Co.

The Russian Government has ordered 250 decapod locomotives, and 68 six-wheel tank locomotives, from American Locomotive Co.. and 250 decapod locomotives from Baldwin Locomotive Works.

The Timiskaming & Northern Ontario Ry. has ordered 100 steel frame box cars, 40 tons capacity, from Canadian Car & Foundry Co. They will be duplicates of those the company is building for Canadian Government Railways, except that the draft gear will be of the friction type instead of the twin spring type.

Canadian Government Railways have received 13 steel frame box cars, 50 tons capacity, from Eastern Car Co.; 81 wood box cars, 30 tons capacity, from Canadian Car and Foundry Co.; and 10 second hand passenger cars, 97 second hand coal cars, 40 tons capacity, and 2 second hand locomotives, from General Equipment Co.

The C.P.R. has received 78 freight refrigerator cars, and 9 automobile furniture cars, completing an order of 260, from its Angus shops, Montreal. The vans previously mentioned as having been ordered at Angus shops have been increased to 27, but are being built at Winnipeg, and 12 of them have been delivered.

Respecting the 5,000 cars which Canadian Government Railways have ordered, it is stated that the cost will be about $13,000,000, the cost averaging some $2,600 each. It is also stated that in addition to those to be used on the government railways, some of the cars will be leased to other lines requiring them. This has not been officially confirmed.

Following are chief details of the 1,000 steel frame box cars, 40 tons capacity, which Canadian Government Railways are having built by Eastern Car Co. for delivery in Dec. and Jan.:

Length inside	36 ft.
Width	8 ft. 6½ in.
Height, floor to bottom of carline	8 ft. 9½ in.
Width of side door opening	5 ft.
Height, rail to top of brake mast	13 ft. 11¼ in.
Height, rail to centre of coupler	2 ft. 10½ in.
Centre to centre of body bolsters	26 ft.
Draft gear	Twin spring
Coupler	Simplex, 5 x 7 in.
Air brake	Westinghouse K.C., 8 x 12 in.
Axles	M.C.B., 5 x 9 in.
Wheels	Chilled cast iron, M.C.B., 33 in.
Journal boxes	McCord, 5 x 9 in.
Journal bearings	M.C.B., lead lined
Wedges	M.C.B., drop forged
Bolsters and brake beams	Simplex

Canadian Government Railways have ordered 1,000 steel frame box cars, 40 tons capacity, for complete delivery by Jan. 31, 1918, from Eastern Car Co.; 1,000 steel frame box cars, 40 tons capacity, for delivery in November and December, and 2,000 similar cars, and 1,000 stock cars, delivery to commence in October and be completed by Mar. 1, 1918, from Canadian Car & Foundry Co. The last two mentioned orders are to be built at Canadian Car & Foundry Co.'s plant at Fort William, Ont. It is expected that the government will place additional orders for rolling stock shortly.

Fololwing are chief details of the 3,000 steel frame box cars, 40 tons capacity, which Canadian Government Railways have ordered from Canadian Car & Foundry Co.:

Length inside	36 ft.
Width inside	8 ft. 6½ in.
Height, floor to bottom of carline	8 ft. 0½ in.
Width, side dor opening	5 ft.
Height, side door opening	7 ft. 8 3/16 in.
Length between end sills	36 ft. 11½ in.
Width over side sills	8 ft. 9½ in.
Height, rail to top of brake mast	13 ft. 11¼ in.
Height, top of rail to running board	13 ft. 4¾ in.
Height, top of rail to centre coupler	2 ft. 10½ in.
Height, sill to bottom side of plate	7 ft. 10 3/16 in.
Height ,top of rail to eaves	12 ft. 7⅞ in.
Width over eaves	9 ft. 3½ in.
Trucks, centre to centre	26 ft. 10 in.
Draft gear	Twin spring
Couplers, bolsters and brake beams	Simplex
Air brakes	Westinghouse K.C. 812
Trucks	Diamond arch bar type
Axles	M.C.B., 5 x 9 in.
Wheels	33 in. cast iron
Centre plates	Cast steel
Journal boxes	McCord malleable iron
Dust guards	M.C.B. standard wood
Brake shoes	Dominion Brakeshoe Co.'s cast iron, steel back

Freight and Passenger Traffic Notes.

The C.P.R. has issued a booklet pointing out the advantages offered for settlement in the eastern provinces.

The White Star Line of steamers, trading to Sarnia and Port Huron, Ont., has decided to omit calling at these and any other Canadian ports and confine its trading to United States ports.

The Toronto, Hamilton & Buffalo Ry. re-established its through sleeping car service from Hamilton. Ont., to Pittsburg, Pa., and Cleveland, Ohio, June 4. The train leaves Hamilton at 8.23 every evening.

The Edmonton, Dunvegan & British Columbia Ry., with its associated lines, the Alberta Great Waterways Ry. and the Central Canada Ry., has opened a ticket and express office in the old Quebec Bank Building, Jasper Ave., Edmonton, Alta.

The C.P.R. trains on the its Gatineau Valley branch will continue to be operated in and out of the Broad St. station, Ottawa. this year as usual, the reported proposal for running powers to enable them to run to and from the Central station not having been acceded to by the G.T.R.

The opening of the McArthur lines from Edmonton to Peace River Landing, Alta., has directed considerable attention to that territory, and already tourist travel is being directed thither from the United States. The river steamer D. A. Thomas is being operated on Peace River, on a schedule, in order to work with the railways in handling the traffic.

In order to advertise the attractions of its Rocky Mountain section for tourist travel, the Canadian Northern Ry. is arranging for an exhibition of pictures. H. L. Beatty, of Toronto, is painting a number of pictures; colored photographic views are being made for moving pictures, and these will be explained by talks by O. Scott, of the company's passenger department.

Steamship & Railway Ticket Office has been incorporated under the Manitoba Companies Act, with a capital of $20,000, and offices in Winnipeg, to carry on the business of selling railway and steamship tickets, the buying and selling of exchange and other business in connection therewith. The provisional directors are: Jos. Finkelman, Mrs. N. Finkelman, M. Cates, Mrs. F. Cates and S. H. Green, Winnipeg.

The Grand Trunk Ry. has issued a booklet, "The Transcontinental Line," descriptive of the route from the Atlantic to the Pacific, offered by the Intercolonial Ry. from the Atlantic coast to Montreal, the G.T.R. thence to North Bay, the Timiskaming & Northern Ontario Ry. thence to Cochrane, the National Transcontinental Ry. thence to Winnipeg, and the Grand Trunk Pacific Ry. thence to Prince Rupert, B.C.

The Alberta & Great Waterways Ry.'s summer traffic is being carried on by a gas driven car, leaving Edmonton for Lac la Biche, Alta., at 8.30 a.m. on Thursdays and Saturdays, returning at 7 a.m. on Fridays and Mondays. There is also to be a mixed train to Lac la Biche, leaving Edmonton at 7.30 a.m. Tuesday mornings, and returning the following day. The remaining mileage to McMurary is being operated by the contractors.

The summer traffic schedule on the Edmonton, Dunvegan & British Columbia Ry., with its branch line, the Central Canada Ry., came into operation, June 10. A train leaves Edmonton for McLennan and Peace River at 17 o'clock Tuesdays and Fridays, and on the return trip reaches Edmonton at 21.30 on Thursdays and Sundays. On Mondays and Thursdays a mixed train runs from Edmonton to South Jct., returning on Tuesdays and Fridays.

The Grand Trunk Pacific Ry. train service from Young to Prince Albert, Sask., was put in operation, June 24. Heretofore the train service has only extended to St. Louis, the crossing of the South Saskatchewan River. A train leaves Young at 8.35 a.m., Tuesdays, Thursdays and Saturdays, arriving at Prince Albert at 2.15 p.m. the same days, and returning leaves Prince Albert at 3.45 p.m., Mondays, Wednesdays and Fridays, reaching Young at 9.27 p.m. the same days. These trains connect at Young with the daily trains on the main line.

The Central Vermont Ry. is issuing tourist tickets for combined rail and auto trips during the summer. The most important tour is described as "The King's Highway trip." Passengers will leave New England points and travel by railway to St. Alban's and then motor to Montreal, about 70 miles, via Lakewood, ferry across Missisquoi Bay, Lake Champlain, to East Alburg, thence via Clarenceville, Lacolle and "The King's Highway," to Montreal, with an alternative route via Phillipsburg, St. John's and Chambly Canal. This trip takes in the Green Mountains and the White River, Winooski and Champlain Valleys.

Rotenberg's Ltd. has been incorporated under the Ontario Companies Act, with authorized capital of $100,000 and office in Toronto, to carry on a railway and steamship ticket, tourist, transportation, telegraph and express agency, and other allied businesses. The officers are Louis Rotenberg, Sr., President; Max Rotenberg, Jr., Secretary-Treasurer. The company takes over the ticket agency business heretofore carried on by L. Rotenberg & Sons.

Railway Finance, Meetings, Etc.

Canadian Northern Ry.—A bill has been passed by the House of Commons authorizing the company to issue collateral trust bonds, redeemable in currency, against the company's securities held by the Dominion Government, payable in sterling, which have been or may be acquired by the Imperial Government. This is a war measure, and is being passed for the same reasons as a similar measure for the C.P.R., to enable the Imperial Government to place war loans with these bonds as security, should the necessity arise.

The Finance Minister stated in the House of Commons, June 7, that no advance had been made "to a railway company" by order in council so far as he knew. The question was asked in reference to a report that the government was advancing a further sum to the C.N.R.

The Senate passed a resolution, May 29, asking for copies of all orders in council passed in conformity with the provisions of the act of 1914, under which $45,000,000 was granted to the C.N.R. under certain conditions. The orders in council had to be passed, it was explained, with reference to the portions of the railway in British Columbia.

Canadian Northern Saskatchewan Ry.—There was deposited with the Secretary of State at Ottawa, June 5, a trust deed made between the company, the British Empire Trust Co., the National Trust Co., and the Crown, securing an issue of 4½% guaranteed debenture stock on certain terminals and bridges in Saskatchewan.

Canadian Pacific Ry.—The House of Commons has passed a government bill, authorizing the company to issue currency securities to retire sterling securities now held by the British Government, so that they may be used as collateral securities for British war loans in the U.S. The Finance Minister stated that this was a war measure initiated by desire of the Imperial Government. It was not intended at present to make such an issue of bonds, but it was desired to have the legislation enacted in order to be prepared for the contingency should it arise. This matter was brought forward at the C.P.R. annual meeting, when it was stated that the arrangement then made for the issuing of a loan in the U.S. had been abandoned owing to the entry of the U.S. into the war on the allies' side.

Central Ry. of Canada.—The Exchequer Court of England has dismissed the application for the appointment of a receiver, giving the company until July 1 for the completion of its plan of reorganization. To carry out this plan it is necessary to obtain consent of 75% of the bondholders, and at the time of writing it was stated that 72% had consented.

Magdalen River Valley Ry.—At a meeting of the directors at Quebec, June 13, a bylaw was passed changing the head office from Quebec to New Carlisle, Que. F. Murphy, Quebec, is Secretary.

Michigan Central Rd.—There was deposited with the Secretary of State at Ottawa, June 8, two agreements relating to the M.C.R. equipment trust of 1917.

National Transcontinental Ry. — Sir James Lougheed stated in the Senate, June 7, that the N.T.R. gross earnings for the fiscal year ending Mar. 31, were $5,916,550.99, and the working expenses $7,806,922.20.

St. John & Quebec Ry. — Sir James Lougheed stated in the Senate, June 7, that the gross earnings of the St. John & Quebec Ry., which is owned by the Province of New Brunswick, but operated as a part of the Intercolonial Ry., for the fiscal year ended Mar. 31, were $81,325.63, and the working expenses $98,300.42.

Timiskaming & Northern Ontario Ry.—Passenger earnings for April, $61,-143.72; freight earnings, $137,094.51; total earnings, $198,238.23; against $51,-565.76 passenger earnings; $181,245.31 freight earnings; $232,811.07 total earnings, for April, 1916.

Betterment Works on the Canadian Government Railways.

The betterments carried out on the Canadian Government Railways during the last financial year, according to a statement by the Minister of Railways in the House of Commons recently, include the following: The relaying of 85 miles of Intercolonial main track with 85 lb. rails, the laying of 10 miles of 85 lb. rails on the New Brunswick & Prince Edward Island Ry., the putting in of 1,100,-000 new ties over the system, the rebal-lasting of 170 miles of track, the extension of 8 passing sidings, the construction of 2 new passing sidings, 14 business sidings and 52 private sidings. Terminal yards weer enlarged on the Intercolonial, giving additional accommodation for 3,061 cars, as follows: Chaudiere Jct., 580; Ste. Rosalie Jct., 230; Moncton, 369; Truro, 282; Rockingham, 1,600. This work on the terminals alone cost over $250,000. A concrete grain elevator of 1,000,000 bush. capacity is being erected at Transcona, Man.; and one of 500,000 bush. capacity at St. John, N.B., both to be completed in the autumn. The steamship Northumberland was acquired from the Charlottetown Steamship Navigation Co. for use between Prince Edward Island and the mainland. In addition to repairs to a large number of buildings, 22 steel railway bridges weer erected, and 6 overhead bridges were replaced with steel spans.

Transportation Conventions in 1917.

August.—International Railroad Master Blacksmith's Association, Chicago, Ill.

September.—Railway Signal Association, Atlantic City, N.J.

Sept. 11.—Master Car and Locomotive Painters Association of the United States and Canada, Chicago, Ill.

Sept. 18-20.—Association of Railway Telegraph Superintendents, Washington, D.C.

Sept. 18-21.—Roadmasters and Maintenance of Way Association, Chicago, Ill.

October.—American Association of Dining Car Superintendents, San Francisco, Cal.

October.—Railway Real Estate Association, Duluth, Minn.

Oct. 16-18.—American Railway Bridge and Building Association, St. Paul, Minn.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railwny Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadinn Express Building, Montreal.

Cnnndian Freight Association (Western lines)—W. E. Camphell, 805 Boyd Block, Winnipeg.

Cnnadian Railwny Club—J. Powell, St. Lnmbert, Que. Meetings nt Montrenl 2nd Tuesdny, each month, 8.30 p.m., except June, July and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Cnnadian Ticket Agents' Associntion—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Church Street, Vancouver, B.C.

Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.

Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

Marine Items too Late for Clasification.

Another Icebreaker Proposed. — The Minister of Marine stated in the House of Commons recently that the question of building another iceberaker, to take the place of the J. D. Hazen, sold to the Russian Government, is under consideration.

The Landbo Transportation Co., Ltd., the incorporation of which was announced in our last issue, owns the freight steamship Landbo. The officers of the company are: E. F. Pardee, President; N. S. Gurd, Vice President; A. L. Burnham, Secretary; J. A. Boland, Buffalo, N.Y., Treasurer. The office is at Sarnia, Ont.

The Reid Towing & Wrecking Co. Ltd. has been incorporated under the Dominion Companies Act, with $200,000 authorized capital, and office at Montreal, to acquire the business and property formerly owned by the Reid Wrecking Co., Ltd., Sarnia, Ont. As announced in our last issue, the property has been acquired by R. M. Wolvin, Winnipeg, who is associated with several transportation and grain concerns, chiefly Canada Steamship Lines, Ltd., which gave rise to the report that the Reid Wrecking Co. had been acquired by that company.

Men for U. S. Vessels.—The U. S. Shipping Board announces a country-wide call for engineers to serve on the forthcoming merchant marine fleet. Not less than 5,000 additional engineers will be needed on U. S. ships in the next 18 months. Anticipating this demand, the board will establish marine engineering schools, in which to train men not now qualified to receive papers, with terms to begin on July 20. The Board is also recruiting for the marchant marine 5,000 masters and mates, and is establishing a chain of schools in navigation on both sea coasts to train those needing preliminary instruction.

The Rideau Steamboat Co., Ltd., the incorporation of which was announced in our last issue, has bought the steamboat Wanakewan from A. W. Campsall, Ottawa, and operates it between Ottawa and Kemptville for local and general transportation and for private picnic partics. The steamboat was built at Kingston, Ont., in 1910, and is screw driven by engine of 8 n.h.p. Her dimensions are: length. 70.2 ft.; breadth, 15 ft.; depth, 5.2 ft.; tonnage, 68 gross, 44 register. The officers are: W. J. Best, President and Manager; F. W. McKinnon, Vice President; Andrew Haydon, Secretary-Treasurer; W. Campsall and W. E. Beaton, directors.

Electric Railway Department

Operating of Two-Car Trains in City Service.

By D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.

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It is the universal practice on steam railways to operate a string of cars, as long as possible, as a train unit. Elevated and subway services have developed along the same lines. The operation of city street cars in single units is still standard practice almost everywhere. The natural evolution of any custom is usually guided by logical reasoning, but is often influenced or even suspended by questions of expediency. The development of steam railway practice has been guided largely by considerations of efficiency and economy, with relative freedom from local restriction as to direction and frequency of service, because of the occupation of a public right of way. Furthermore the requirements and essentials of long distance transportation are quite different from those pertaining to the incidental movements of people within the limits of a city. On long suburban runs, operated electrically, the advantages of multiple unit trains are pretty well recognized, but the idea of train operation in city streets does not seem to have received the attention that a study of conditions would indicate that it should.

Two-Car Train, Montreal Tramways Company.

The modern street car is a development of the palanquin, the rickshaw, the ox cart and the horse drawn cab, through the public chaise and bus. One of the fundamental requirements of street car operation is frequency of service. Disregard of this fact results in the loss of the best paying customer, viz., the short haul passenger. This factor tends toward a large number of small independent units. When the density of traffic on a street is such as to demand a service of large single car units, with a headway of less than 3 or 4 minutes, there are several reasons for serious consideration of the combination of two or more units into trains. The practice may be considered first as a means of meeting the variation in the volume of traffic, by the addition of trailers or multiple units to cars running with a reasonable headway on a fixed schedule, instead of confusing and disorganizing the operation of the line by changing the time tables at different times of the day. The troublesome question of extra platform labor is also favorably affected.

The subject can be approached from two distinct points of view, that of economy of operation under ordinary conditions, and again as a relief from congestion. In the larger cities, having congested areas, the more important aspect is the possibility of carrying a larger number of people away from a given area in a given time with a minimum number of cars. This last factor introduces the close relation that exists between efficiency and economy. The solution of the problem of congestion is not the simple matter of adding more cars. All effort should rather be applied to the acceleration of the average movement of a limited number of cars aways from certain areas, keeping in mind the fact that 10 cars moving around a loop at an average speed of 10 miles an hour will carry as many people as will 20 cars moving around the same loop at 5 miles an hour, and give far better satisfaction to everyone concerned. This does not mean that cars are to be run at dangerous maximum speeds during the few seconds that such speeds could be reached, but that we should make a careful study of all the factors that help to restrict and slow down the average rate of transportation and take serious steps to eliminate the unnecessary causes of delay.

After all the more obvious improvements have been effected, such as educating the public to move quickly, and designing platform arrangements that will enable them to do so, training motormen to make bold but safe acceleration, and to apply their brakes on the same principles, and training of conductors toward sharp and energetic action of an infectious order, we have to turn to such means as the coupling up of single units into trains. Altogether aside from the selfish idea of economy, consideration of efficiency and quality of service rendered to the public demand any modifications of existing practice that tend to minimize the objectionable features of street congestion. The idea of train operation of street cars is by no means new. The first and more obvious method adopted was the addition of a trailer to a motor car. This practice has not always been satisfactory, not because the principle was wrong, but because the means at hand for carrying out the idea were wanting in many respects. The success of this practice was in most cases seriously limited by factors of gradient, tractive effort, motor capacity, unsuitable couplers, car body design and inefficient means of entry and exit.

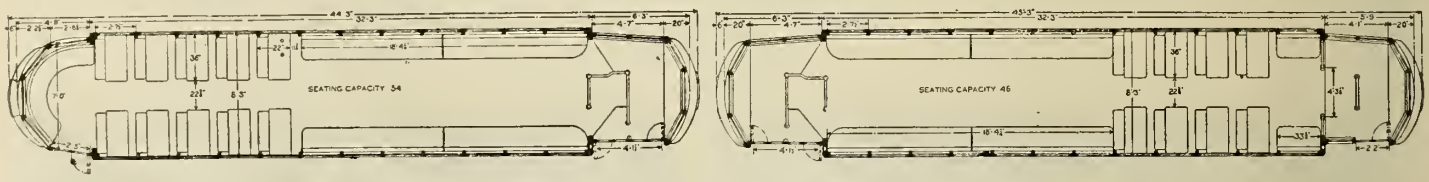
Perhaps the first serious discussions of the possibilities of train operation in city streets are a paper written for the A.E.R.A. by Mr. Franklyn in 1911 and a report by a joint committee of the same association in 1912. The committee arrived at certain conclusions and made recommendations based on experiment as well as careful thought. The opinion expressed was strongly in favor of further development and the idea has now taken firm hold throughout the country. It is safe to predict that we will soon see trains of two or more cars, as standard operating practice, in many growing cities, where public opinion will not countenance the temporary expedient of elevated tracks as an intermediate step between surface lines and subways.

It is generally admitted that the evils resulting from congestion are hardly appreciable up to a certain density of traffic, but that when a point is reached, when the distribution of the various streams of fairly continuous movement, the confusion and consequent slowing down of motion at intersections increases very rapidly with each further increment. The number of people that can be transported from one point to another on a car line with reasonable regularity in a given time is controlled by several factors, the principal of which are: (1) Speed of movement between stops. (2) Number of stops. (3) Interference of vehicular and pedestrian traffic. (4) Delays at street intersections. (5) Time at rest for loading. (6) Free headway or spacing between car units.

A little consideration will show that items 1 and 2 do not materially affect the comparison between one and two-car trains when the number of stopping points is reasonably restricted. Item 3: The net result of vehicular interference is in favor of two-car trains, principally because the spaces between cars are longer, and drivers have more opportunities of cutting in on car tracks and out again, without interfering with the movement of cars. The greatest time saving is effected under items 4, 5 and 6. The amount of traffic that can be distributed at any intersection depends upon several conditions. When a car or vehicle crosses in one direction, all move-

ment in the other direction must stop. The amount of delay depends upon the time that the intersection is occupied by the moving unit. The interruption of crossing traffic is not restricted by the time a unit takes to pass a given point, because, before a movement occurs, the crossing must be cleared and a safety zone established ahead. When this safety zone is established, a two-car train will occupy the intersection only slightly longer than one car, because by the time the front car has cleared, the train has developed considerable speed and the second car passes very quickly. Furthermore, only half the number of safety zones must be established. Delays on account of actual loading and unloading are cut down nearly one half, because two cars at rest can load as quickly as one.

Mr. Jackson, of the Public Service Railways, New Jersey, who had charge of extensive experiments made with train operation in Newark in 1912, stated before the American Association in that year, that careful records showed that a single car occupied a crossing 118 ft. long, an average of 16.9 seconds, while a two-car train occupied the same crossing only 20.4 seconds, an increase of only 20%. Furthermore, that the actual interchange of passengers at congested



Plan View of Two-Car Train, Montreal Tramways Co.

points, according to a count extending over one week, showed an average of 1.7 seconds per passenger handled in single cars against 1.2 seconds per passenger handled in two-car trains. This comparison takes into account all factors of delay, and is not a simple comparison of the average time occupied per passenger in actually boarding and leaving the cars.

Of perhaps more importance than any is the advantage of greater free headway when cars are operated in pairs. It is an unfortunate fact that when the demand for transportation is greatest, and people are most anxious for quick transport to or from business, the rate of movement of traffic of all kinds slows down. The movement of street cars is especially affected, because they are constrained to move on fixed tracks and cannot move around obstructions or take to less crowded streets. More cars have been added to meet the rush hour traffic. In addition to the extra delays to each car unit, caused by a larger number of people boarding and leaving, and the consequently increased number of stops, the safety zone between cars has been reduced in length. Motormen are unable to get up normal rates of speed in case the car ahead should stop, or slow down unexpectedly. Every delay to any car in the series is repeated back from car to car down the street. At each intersection, several cars are stopped in line. Each of these cars must move up a car length at a time, and again stop while the first car of the line is unloading, loading, and waiting for signal from traffic officer after a stop of a minute or so. It is quite common for a car to require 5 or 6 minutes to move up to and pass a single intersection. In other words, when the number of car units on a line is increased to a point where the movement of one car interferes with that of the car following, the rate of traffic movement begins to slow down. A point is soon reached when the addition of more cars actually results in so much slowing down of the whole chain of cars, the consequence is that fewer people are carried away from a given point in a given time, and, furthermore, the service is less satisfactory to both the company and the passenger, because of the greater time required to deliver the latter at his destination after he has succeeded in finding space on a car.

Coupling cars in pairs almost doubles the free headway between units, and enables every motorman to move more quickly between stops. Interference from cars ahead is very materially reduced and more people will be carried away at a higher speed than when single car units are employed. Experiments with trailers hauled by motor cars have been conducted for about three years on St. Catherine St. in this city. The results have been satisfactory, especially since the public as well as the train crews became accustomed to their use.

A certain slowing down of schedule speed is inevitable on account of limited traction for acceleration and a slightly increased number of stops. It has been our experience that average conditions of grade acceleration, condition of rail, and density of traffic, require a motor capacity of from 8 to 9 h.p. per ton of light car weight, for satisfactory and economical operation. Furthermore, that this motive power be fairly well distributed over all wheels of the train, to ensure a fair rate of acceleration and hill climbing capacity.

Bad rail conditions and heavy grades encountered on all cross town lines prevent the general use of ordinary trailers in this city. In order to overcome this difficulty, the management decided to order 50 two-car trains, with motors on both cars, all operated by a master controller in the front car. Each car might be operated as a separate unit, but on account of the special ararngement of doors at front end of the trailer, which has the important result of eliminating indecision of passengers in making choice of car, it is not likely that advantage will be taken of this fact for other purpose than for shunting.

Description of Cars.

Length of body	32 ft. 3 in.
Width of body	8 ft. 5 in.
Weight of motor car without load	43,800 lb.
Weight of trail car without load	36,470 lb.
Weight of train without load	80,270 lb.
Motors, motor car	4 50 h.p.
Motors, trail car	2 50 h.p.
Brakes	automatic air
Doors	air operated
Steps	folding type
Seats per car, motor car	42
Seats per car, trail car	45
Control	electro, pneumatic, automatic
Color	Montreal Tramways green

It is interesting to note that although the total rated power of motors per train is 300 h.p., they can safely develop 600 h.p. for short periods. About 400 h.p. per train is necessary to operate the heavier cross town grades on a fair rail.

Control.—After due investigation of the possibilities and advantages of the various systems of controlling multiple unit trains, and taking into account the fact that all modern cars in this city are already equipped with the E-35 controller, it was decided to adopt the Westinghouse P-K apparatus. The standard equipment has been modified to suit our conditions. All main wiring and apparatus will be located under the car body. A master controller will be on the front end of each car, and the auxiliary 12 volt storage battery under a seat. The master controller will be a miniature copy of the K-35 in arrangement of notches, and will be handled in exactly the same manner, except that an extra notch has been added, which will give automatic acceleration, within the limits of a current relay, over the whole range. Owing to the fact that motormen may only occasionally be called upon to operate this type of control, and that all motormen would have to be specially trained, it was thought unwise to adopt any system that was radically different in operation from an ordinary car. When making a start the motorman can either throw the controller wide open to the automatic position, or he may advance one notch at a time to take care of unusual traffic or rail conditions, or if he should have to accelerate on a grade on which the automatic advance would be too slow or inoperative altogether.

The P-K engine has an inherent time lag that is sufficient to prevent any undue rushes of current. The result is that if a motorman should throw his controller open too quickly to any notch, the main controller will notch up at a slower rate to that point. Additional features of the P-E control as applied to the Montreal Tramways Co.'s cars are: a line switch controlling all breaking of main motor circuits, to relieve controller fingers; a door interlock in the master controller circuit, to prevent cars starting until all doors are closed; a train line switch arranged to open the master control circuit, in case of emergency application of the brakes; an emergency hand operated switch to short circuit the door and train line switches, in case they are out of order; buzzer system and motorman's signal light operated from the control battery; paralleling of batteries, the train to load all batteries equally; automatic charging of batteries from compressor circuit.

The air brake system is so designed as to provide a high degree of safety. The motorman applies brakes to all wheels of both cars. Furthermore, should he fail to do so in case of danger, the conductor of either car can instantly apply the brakes on all wheels of train without moving from his position. Should draw bars part, power is cut off and the brakes are automatically applied to both cars. The doors will be so interlocked with the power system that the motorman will be unable to start car until all doors of train have been closed tight. All automatic features are operated from storage batteries, so as to ensure their normal operation when power is off or trolley should leave wire.

A new system of lighting has been

arranged that will have a much better appearance, as well as providing better light. Five 94-watt tungsten lamps, with semi-opaque reflectors and automatic shunting cut-outs will be located down the centre of car. An auxiliary circuit of five 23-watt tungsten lamps will serve to illuminate signs, and provide an emergency light over conductor's position, in case of a burnt out fuse.

Electric heaters will be controlled by a special thermostat and automatic switch, to maintain a uniform temperature in car, and will overcome the discomfort due to local overheating of certain seats in mild weather. The difficult matter of ventilation has received special attention, and it is hoped that the new scheme will ensure sufficient circulation of air in mild weather, without consequent draughts and discomfort during the extreme colds of winter. In addition to the regular floor ventilators, there has been provided a hinged sash at the top of the left hand front vestibule window.

Further improvements in truck design will tend to make cars ride even more smoothly than at present. Springs are arranged to give a graduated reaction that will largely eliminate the track vibration when cars are light. Vibration is further reduced by the substitution of hinged bolster guides in place of ordinary rubber plates.

Power Consumption.—I feel that attention should be called to a more or less mistaken popular idea that the addition of a trailer to a motor car adds very little to the power consumption of the latter. As a matter of fact, the same quantity of energy is actually required to transport a pound of weight, whether that pound is located on the first or second car of a train, and the power necessary for propulsion under stated conditions is simply a question of weight hauled. It can be conscientiously stated that tests will show the contrary. Why this appearance of unreliability of tests? I will attempt a simple explanation by stating that such a test will surely show, if carried to its full conclusion, that the equipment of the single unit has not been properly selected for single car operation and is much more efficient when loaded up by the addition of a trailer.

The tendency of the operating department is always toward a demand for over capacity of motors, and too high a gear ratio for efficiency; the argument invariably being that motormen cannot maintain schedules otherwise. The natural result of the higher power is that train crews are deliberately encouraged to do their work in an inefficient manner, since they do not have to consider the refinements of operation in their efforts to keep on time. If a trailer be added to such car, the result is a slowing down of the motors over the same route, the motor capacity is more in keeping with the weight handled and the crew must study and practice refinements of operation in order to keep on time. The free running speed of such a train is not as great as a single car, therefore acceleration must be prompt and the rate of braking more severe. Both these practices make for higher efficiency, which results in the apparent saving of power shown by tests. The rheostatic losses are cut down, and, of even more importance, perhaps, the amount of power legitimately used for acceleration, and which must be finally wasted in wearing out and heating the brake shoes, will be reduced in proportion to the squares of the maximum speed on the run between stops.

It must be remembered that if you double the maximum speed, you expend four times as much power, which is nearly all wasted at the end of each run. Incidentally, of course, the conductor must be more sharp in the doing of his work and all loafing must be eliminated. I can safely state that very nearly as efficient operation could be obtained on single cars, if the gear ratios were made higher, to give lower speed, and the motor capacities lowered in proportion, always keeping in mind that hill climbing and winter conditions may justify installation of power above the point of maximum efficiency. Our experiments with trailers in this city has brought us to a realization of this fact, and we expect to get efficient operation, within the economical capacity of our standard motors, by adding only two extra motors of equal unit capacity to take care of 80% additional load.

I should, perhaps, add that there are certain elements that do fairly make for higher power efficiency in trailer operation, as opposed to single cars, but they are not of very serious moment, viz.: (1) Elimination of motor friction on trailer. (2) Slight reduction in wind resistance. (3) Operation of trailer over freshly cleaned rail. (4) Elimination of energy expended in acceleration of extra armatures. Savings under items (2) and (3) apply to multiple trains.

The chief offsetting disadvantages to consider are: (1) Loss of tractive capacity due to idle weight on trailer axles. (2) Overloading of motor car equipment with consequent increased maintenance and liability of breakdowns. (4) Operation at less efficient point on efficiency curve on all but free running speeds.

The questions of whether a simple trailer system, or a multiple unit system, is the best, and whether trains should be operated continuously or only during rush hours, can only be decided after an intelligent study of local conditions, both physical and financial. From a strictly engineering point of view, the advantages of multiple unit operation leave very little room for the consideration of simple trailers, unless the traffic demand is such that trailers can be operated continuously on fairly level streets, without extreme climatic variations. Under these ideal conditions the operation of street cars would be guided by the same principles as steam trains.

Guelph Radial Ry. Wages.—The management of this line, which is owned and operated by the City of Guelph, Ont., has raised its conductors' and motormen's wages 1c an hour, the new rate being: 1st year, 23c; 2nd year, 24c; 3rd year, 25c. The wages of the shopmen are varied, the average being 27½c.

Officials of Division 583, Amalgamated Association of Street and Electric Railway Employes of America notified the Calgary City Council, June 14, that they demanded exclusive recognition, with the following rates of wages: 1st year, 35c an hour; 2nd year, 38c an hour; 3rd year, 40c an hour, with 50c an hour for running one-man cars, together with sundry alterations in the working conditions. The majority of the employes on the municipal railway do not belong to the union, but belong to a local association. The council recognizes both bodies.

The Toronto Ry. is reported to have ordered 100 trucks, to be delivered by the end of the year, in order to carry out the Ontario Railway and Municipal Board's order to provide additional cars for immediate service.

Electric Railway Employes Strike in Vancouver.

The agent of the Street Railway Men's Union in Vancouver, B.C., announced, June 13, that the men had unanimously decided to go on strike immediately. This resulted in tying up the service in Vancouver and on the interurban lines to New Westminster. The line to Lulu Island is operated under a different agreement, the crews being under the jurisdiction of the Brotherhood of Railway Trainmen, but subsequent to the strike on the other the line was closed down by the company lines.

A statement issued by G. Kidd, General Manager, June 11, said: "The company voluntarily increased the men's wages last year, the agreement being extended to June 30, 1918. About a month ago the company intimated to the men that owing to the abnormal conditions they had again considered the question of granting some relief, particularly to the lower paid men, and they proposed to give a war bonus to the employes covered by the above agreement. The bonus proposed was as follows: 15% to employes earning $60 a month or less; 10% to employes earning more than $60 and not more than $70 a month; 5% to employes earning more than $70 and not more than $80 a month. I have at meetings with the men pointed out the serious conditions of the company's finances and the losses we are making in our railway business, the increase in the cost of all materials we use, the decrease in the population, and the competition to which we are subjected, making it impossible for us to earn anything like a fair return to our investors. The representatives of the men, though impressed with the company's point of view, have stated that they do not consider the company's offer sufficient, and that the increase in the cost of living is greater than the company's offer will adequately provide for. I pointed out to them that the cost of living in Vancouver, compared with other cities in Canada, is at present very favorable, as the following figures will show: Taking Vancouver as a basis and calling it 100%, the cost of living in Winnipeg is 118; in Toronto 125; in Montreal 110. The wages of the motormen and conductors, four years in service, in Vancouver, are 35c an hour, plus the additional bonus referred to above. In Winnipeg the corresponding wages are 36c; in Toronto 30c; and in Montreal 27c."

Under the scale in force prior to the strike a man starting was paid 27c an hour, and was increased from time to time up to 35c. The men asked for a starting rate of 35c, increasing according to the term of service to 45c.

In referring to the men's decision, Mr. Kidd said, on June 13: "We presented the best offer it is possible to make to the men, and the matter now rests with themselves."

It is reported that the jitneys have been doing a big business, an increasing number being rushed into the service in the endeavor to meet the emergency. The company has made no attempt to operate a service.

A press dispatch from Vancouver, June 22, stated that the strike had ended, and that cars commenced running in Vancouver on that date. It also stated that the company had decided to pay a war bonus aggregating about $300,000 a year, on the understanding that the transportation situation in the city would be enquired into by an expert.

Canadian Electric Railway Association's Annual Meeting.

The Association's annual meeting in Montreal, June 5 and 6 was largely attended by officials of member companies throughout Canada, and was probably the most successful in the association's history. The President, E. P. Coleman, General Manager, Dominion Power & Transmission Co., Hamilton, Ont., who presided, opened the meeting by an address on the association's work and many other important matters affecting the electric railway industry.

The Honorary Secretary Treasurer, Acton Burrows, presented a very complete report, dealing with the association's work during the past 12 months. In referring to the membership he showed that out of 1,417.62 miles of electric railway in Canada, owned and operated by private companies, at June 30, 1916, only 181.65 miles were controlled by companies outside the Association's membership. The report also dealt with the following questions: Transportation of postal mail; abolition of juries in trials of cases against companies; Nova Scotia legislation re hours of labor and rates of fare; Quebec legislation regulating vehicle traffic; headlights on electric railway cars in Ontario; lavatory accommodation on interurban railways, collection and dissemination of information; wages of employes; standard practice in laying paving blocks; car wheel data; standard cars in cities; one-man car operation; employment of women as conductors, Amalgamated Association of Street and Electric Railway Employes of America; assessment of track in cities; compensation for abolition of perpetual franchise; revenue and free passengers; transportation for officials' wives; commission to town agents for selling tickets and handling freight and express; reporting of accidents in Ontario, jitney regulations. The report was discussed section by section, as read, and action was taken on a number of subjects referred to.

The following papers were read and discussed: Labor questions, by C. L. Wilson, Assistant Manager, Toronto & York Radial Ry. Bonuses to motormen, by W. S. Hart, Secretary Treasurer, Three Rivers Traction Co. Some track maintenance problems, by W. F. Graves, Chief Engineer, Montreal Tramways Co. Car wheels, by G. Gordon Gale, Vice President and General Manager, Hull Electric Co. Purchasing and storekeeping methods, by J. S. Mackenzie, Purchasing Agent, Winnipeg Electric Ry. Storekeeping and purchasing methods, by J. B. Griffith, Purchasing Agent, Dominion Power & Transmission Co. A practical method of stores accounting, by S. Potter, Master Mechanic, Detroit United Ry. Two car electric train operation, by D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co. Commutation books, school books and reduced rate tickets, by A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry. Move quickly and help us take you home quicker, as a step towards rapid transit, by A. Gaboury, Superintendent, Montreal Tramways Co. Interurban motors as feeders to electric lines, by W. N. Warburton, General Manager, and Secretary Treasurer, London & Lake Erie Ry. and Transportation Co. Reasons for the use of the name light-safety-car, by R. H. Wheeler, Engineer, Three Rivers Traction Co. Handling complaints, by A. D. B. Van Zandt, Publicity Agent, Detroit United Ry. Tungsten versus carbon lamps for car use, by S. Roseveare, Electrical Engineer, Toronto Suburban Ry. These papers are copyrighted and will be published in the association's official proceedings, for distribution to officials of member companies.

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Charles L. Wilson
Assistant Manager, Toronto & York Radial Ry., and President, Canadian Electric Railway Association, 1917-18.

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Edward P. Coleman
General Manager, Dominion Power & Transmission Co., and President, Canadian Electric Railway Association, 1916-17.

The following officers, etc., were elected: President, C. L. Wilson, Assistant Manager, Toronto & York Radial Ry. Vice President, A. Eastman, Vice President & General Manager, Windsor, Essex & Lake Shore Rapid Ry. Honorary Secretary Treasurer, Acton Burrows, Managing Director, Canadian Railway and Marine World, re-elected for the 11th consecutive year. Executive Committee, E. P. Coleman, General Manager, Dominion Power & Transmission Co.; James D. Fraser, Director and Secretary Treasurer, Ottawa Electric Ry. Co.; A. Gaboury, Superintendent, Montreal Tramways Co., G. Gordon Gale, M. Can. Soc. C. E., Vice President & General Manager, Hull Electric Co.; H. G. Matthews, General Manager, Quebec Ry., Light, Heat & Power Co.; E. L. Milliken, Manager, Cape Breton Electric Co. Assistant Secretary, A. A. Burrows, Secretary and Business Manager, Canadian Railway and Marine World. Legislation Committee, J. D. Fraser, Director and Secretary Treasurer, Ottawa Electric Ry.; H. M. Hopper, General Manager, New Brunswick Power Co.; George Kidd, General Manager, British Columbia Electric Ry.; H. R. Mallison, Managing Director, Nova Scotia Tramways & Power Co.; H. G. Matthews, General Manager, Quebec Ry. Light, Heat & Power Co.; Wilford Phillips, General Manager, Winnipeg Electric Ry.; C. L. Wilson, Assistant Manager, Toronto & York Radial Ry.

On the evening of June 5 the companies' officials attending the meeting were entertained at dinner at the Windsor Hotel by the Montreal Tramways Co., its General Manager, J. E. Hutcheson, occupying the chair. The dinner was a most enjoyable one, an excellent musical programme having been provided. Brief speeches were made by the chairman, and by E. P. Coleman, James Anderson, Manager, Sandwich, Windsor & Amherstburg Ry.; Patrick Dubee, Secretary Treasurer, A. Gaboury, Superintendent, W. G. Graves, Chief Engineer, Montreal Tramways Co.; George Ham, of the C.P.R. headquarters staff, and Chief Tremblay, of the Montreal Fire Department. On June 6, Mr. Hutcheson entertained the retiring and incoming officers and executive committee at luncheon at the St. James' Club, Sir Alexander Bertram being also a guest. In the afternoon, the company's officials attending the meeting were taken in the Montreal Tramways Co.'s official car on a tour of inspection of some of that company's principal properties, including the Hochelaga power house, the capacity of which is being largely increased, and the Youville shops.

Montreal Tramways Co.'s Wages.—The Montreal Tramways Co. has voluntarily increased its conductors and motormen's wages 2c. an hour.

The Port Arthur Public Utility Commission and the Utilities Committee of Fort William, on June 3, at a meeting, agreed to fix the wages of motormen and conductors on the electric lines in the two cities, commencing June 16, as follows: 1st 6 months, 30c an hour, next 18 months, 35c; over 2 years service, 36¢; an extra 1c an hour for operation on one-man cars. Time and a quarter will be paid on regular day off, if called for duty, and also on legal holidays. No overtime allowed for Sundays or for extra time other than mentioned above.

The Windsor, Ont., east end citizens' association were addressed recently on the municipal ownership of street railways by A. Simmers, who claimed that a municipal line would be run for service, whereas privately owned lines were run for profit.

Winnipeg Electric Railway's Employes' Wages Arbitration Etc.

The Board of Conciliation and Investigation appointed by the Minister of Labor on April 27, to deal with differences between the company and certain of its employes, members of Winnipeg Division 99, Amalgamated Association of Street and Electric Railway Employes of America, held meetings between May 16 and June 2, reported that after hearing evidence and after conferences with the company's officials and with a committee of employes, it was successful in negotiating a settlement and a written agreement was executed. The board, which consisted of Isaac Pitblado, K.C., representing the company, R. A. Rigg, M.L.A., representing the men, and Judge R. H. Myers, as chairman, further reported as follows: "The demand for increased wages came at a very inopportune time for the company, whose revenues have declined to an alarming degree since the outbreak of war. Looking at the matter solely from the company's ability to pay, it is not at present in a position to add to its operating expenses. While other business concerns are able to add any increased cost of production to the price of their commodities, the company's rates of fares are fixed by contract with the city of Winnipeg (confirmed by statute) and cannot be increased. Two main features have contributed to the decline in the company's revenues—1st, the business conditions created by the war, and, 2nd, the jitney competition which sprang up shortly after the outbreak of the war. While the decline in receipts, from the falling off of business caused by the outbreak of the war was, of course, uncontrollable, the jitney competition stands on a different footing. The company feels very strongly that this jitney competition as carried on in Winnipeg is extremely unfair to it, and it has urged strongly before the board its position. The company has an exclusive franchise, by which, in consideration of a fixed agreement as to the rates of fares to be charged, it was to have a monopoly of the street car business on the streets of the city. At that time there was no idea of transportation by means of jitneys, and the company contends that the permission by the city of the jitney competition, with the minimum of regulation which now exists, is in effect a breach of the city's agreement with it. However this may be, the Board cannot but appreciate the serious financial loss which is being inflicted upon the company by this jitney competition, which has been strenuously urged by the company as a reason why it is unable to pay the men higher rates of wages. On the other hand, while the board appreciated the position in which the company had found itself, the application for higher wages by the motormen and conductors was justified in view of the increased cost of living. The employes presented to the board very full and carefully prepared statements showing the Winnipeg prices of the various necessaries of life, and the great increase which had taken place in such prices in recent years. Both the company and the employes could only be induced to sign the attached agreement after having been assured that the award of a majority of the board would be along the lines set forth in the agreement. Throughout all our endeavors the spirit of conciliation and a sincere desire to reach an amicable conclusion was evinced, and the board desires to express its appreciation of the fairness and courtesy which marked the conduct of all parties and their representatives alike to the board and to one another, and we feel assured that the good feeling which has heretofore existed between the employes and the company's officers will long prevail. The board expresses its gratitude to all parties concerned for the assistance given in the investigation and the spirit of fair play that was exhibited."

Following are the rates paid up to May 1 and the current ones under the new agreement per hour:—

	Old.	New.
1st 6 months	25c	28c
2nd 6 months	27c	30c
2nd year	28c	31c
3rd year	31c	33c
Over 3 years	34c	36c

Extra conductors and motormen reporting regularly at the company's stated times, according to present system, every day during the week, and ready and able to work, to be paid a minimum wage of $9 a week. Wages to be paid semi-monthly on the 15th and last days of month, as nearly as possible. Overtime on public holidays to be paid at rate of time and a half; exhibition time and other similarly busy days included. Sunday work to be paid at the rate of 10 hours pay for 8½ hours work, which shall constitute a day's work on Sundays. Conductors and motormen training students to be paid 25c a day extra while so engaged.

Following are some of the other principal provisions of the agreement: Neither the company nor the employes will discriminate against any employe because of his being, or not being, a member of any street railway employment union. Free transportation to be given all conductors and motormen on Winnipeg Electric Ry. when in uniform, or producing a badge furnished by company. Free transportation to be given conductors and motormen on the company's outside lines, on application to general office. Maximum number of passes for any one day to be 10. Passes to be good on any day except holidays. Conductors to be supplied with tickets and change to value of $25.

Each conductor to be given a uniform pea jacket, and each motorman a uniform overcoat every two years. Any conductor or motorman leaving the service within six months may return the coat by paying $1 a month for the time he has had it, or may keep the coat by paying for it, less $1 a month for the time he has had it. The company to pay half the cost of the first uniforms, all uniforms thereafter to be furnished free. Conductors to be provided with a summer cap each year, and a winter cap every two years, and motormen with summer and winter caps every two years. Conductors and motormen leaving the service within four months after receiving a uniform will be charged full price for it.

The agreement to be in force for one year from May 1, 1917, and thereafter from year to year until changed. Either party desiring to change it on May 1, 1918, or on May 1 of any subsequent year to notify the other party at least 30 days before such date.

The Edmonton Radial Ry. had a car destroyed by fire on the Highland Ave. line, June 13, owing to a trolley wire falling. Estimated loss, $7,000.

Electric Railway Finance, Meetings, Etc.

The British Columbia Electric Ry. has paid the City of Vancouver $3,464.32 percentage due for May, an increase of $334.59 over May, 1916.

British Columbia Electric Ry. and allied companies:

	Apr. 1917	Apr. 1916	7 mths. to Apr.30,'17	7 mths. to Apr.30,'16
Gross	$447,429	$421,265	$4,513,808	$4,248,085
Exp.	350,341	343,398	3,544,407	3,513,532
Net	97,088	77,867	969,401	734,553

Cape Breton Electric Co.:

	Apr. 1917	Apr. 1916	Jan. 1 to Apr.30,'17	Jan. 1 to Apr.30,'16
Gross	$34,508,77	$28,234.65	$138,853.72	$118,859.79
Exp.	21,727.37	18,295.86	85,286.22	76,004.32
Net	12,781.40	9,938.79	53,567.50	42,855.47

The New Brunswick Power Co. has placed on the Canadian market $250,000 of its issue of $1,000,000 of 7% cumulative first preferred stock, the other $750,000 having been taken in the United States. The company owns the street railway and other properties formerly owned and operated by the St. John Ry. Co. It has an authorized issue of $2,000,000 of common stock; $3,500,000 of first preferred cumulative 7% stock; $1,500,000 of second preferred non-cumulative 7% stock, and an authorized bond issue of $5,000,000, of which there is outstanding $2,000,000 common stock; $1,000,000 first preferred stock; $350,000 second preferred stock, and $1,750,000 of 5% bonds due 1937.

Nova Scotia Tramways & Power Co.—A half yearly dividend of 3% on preferred stock has been declared payable July 2.

Sherbrooke Ry. & Power Co.—It was reported to the Sherbrooke, Que., City Council, June 6, that F. W. Teele, Vice President, S.R. & P. Co. had discussed with a committee the question of the relations between the city and the company. A draft of a new franchise was discussed, as was also a suggestion for the taking over of the company's electric railway interest at a price to be fixed by arbitration. The estimates as to the value of the railway plant vary from $225,000 to $275,000. The committee was authorized to further consider the matter before making any recommendation.

Toronto Civic Ry.—Revenue for May, $22,512.60; passengers carried, 1,325,856; compared with $18,714.48 revenue, and 1,106,064 passengers carried for May, 1916.

Toronto Ry., Toronto & York Radial Ry. and allied companies:

	Apr. 1917	Apr. 1916	4 mths. to Apr.30,'17	4 mths. to Apr.30,'16
Gross	$970,367	$883,209	$3,896,595	$3,546,784
Exp.	490,524	444,212	2,129,129	1,853,075
Net	479,843	438,997	1,767,466	1,693,709

Toronto Railway:

	1917	City percentage	1916	City percentage
Jan.	$510,053	$ 76,508	$473,784	$69,847
Feb.	473,184	70,976	470,704	70,614
Mar.	531,080	105,857	518,555	97,237
Apr.	510,334	102,066	496,172	99,234
May	510,870	102,174	500,515	100,103
	$2,535,521	$457,581	$2,459,730	$437,035

Winnipeg Electric Ry. — The gross earnings for April were $265,594.18; net after operation, $71,414.78; net after fixed charges, $10,166.26.

	Apr. 1917	Apr. 1916	4 mths. to Apr.30,'17	4 mths. to Apr.30,'16
Gross	$265,594	$282,498	$1,159,350	$1,169,808
Exp.	194,179	171,463	837,262	730,148
Net	71,415	111,035	322,088	439,660

The London, Ont., City Council has extended to May 1, 1918, the arrangement with the London St. Ry for the operation of Sunday cars.

Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—A press report states that the company has applied to the Victoria City Council for permission to build a second track on part of its line on Esquimalt Road. (May, pg. 203.)

Edmonton Radial Ry.—Tenders have been asked for the supply of three miles of grooved trolley wire, about 6,720 lb., to replace the wire from 112th St. and Jasper Ave. to 124th St., both tracks, also one track on Alberta Ave., namely from John St. to Alberta and Kirkness Sts. (May, pg. 203.)

London St. Ry.—The City Engineer reported to the City Council recently that the company was doing as rapidly as possible all the work for which it was responsible in connection with the streets being paved.

In connection with a new agreement for the operation of Sunday cars, the question of building a second track on Richmond St. had been raised. C. Currie, President, informed the committee which arranged the matter that if the city would widen the street about 3 or 4 ft. a second track would be laid. (Jan., pg. 30.)

Moncton Tramways, Electricity & Gas Co.—We are officially advised that the city has let contracts for paving about 11 city blocks on High St., 7 city blocks on Main St., 6 city blocks on King St., and 2 city blocks on Mechanic St. The company's lines run on all these streets, and it will have to pay for 8 ft. in width of this paving along its tracks. In consequence of this the track is being fixed to suit the new grade. New cross ties are being put in where needed.

The company has completed a new machine shop with machinery for doing all kinds of machine work, including lathes, drill presses and grinders. All the machinery is motor driven. (June, pg. 243.)

Nipissing Central Ry.—We are officially advised that the only new work contemplated is the rebuilding of the car barns at North Cobalt, Ont., destroyed by fire, Mar. 4.

We are officially advised that the portion of the buildings at North Cobalt, Ont., destroyed by fire recently, will be rebuilt during the summer. Only the car barn and office portions of the building were destroyed the machine shop and substation being saved intact.

Nova Scotia Tramways & Power Co.—We are officially advised that it is not proposed to carry out any track extensions in Halifax, N.S., during this year.

Regina Municipal Ry.—The City Commissioners of Regina, Sask., on June 15, took into consideration a report as to the cost of building an additional half mile of track on Pasqua St., in order to convert the red and blue lines into a belt line. Without providing for an interlocking plant and 4 diamonds, the grading, track laying and other work is estimated to cost $12,000. It was arranged to have the proposal discussed at the next meeting of the city council.

The building of a second track on Elphinstone St. to the exhibition grounds is under consideration. (Jan., pg. 31.)

Sandwich, Windsor & Amherstburg Ry.—The Walkerville, Ont., Town Council, on June 12, ratified an agreement authorizing the company to build a Y on Ottawa St. One of the provisions of the agreement reserves the town's right to use the road for its own railway, or allow any other company authorized by the town to have its use. The Y is reported to have been installed. (Jan., pg. 31.)

Winnipeg Electric Ry.—The Winnipeg City Council is applying to the Manitoba Public Utilities Commission for an order to compel the company to pay a share of the cost of the projected Provencher Ave. bridge.

By an order in council of Dec. 7, 1914, the Dominion Government provided for the sale to the W.E.R. of certain water power lands on the Pinawa channel, Winnipeg River, upon which the company has erected a large hydro electric power plant from which power is being delivered in the City of Winnipeg. Subsequent to the passing of this order the Department of Justice ruled against the selling of water power lands. After considerable negotiations the company agreed to accept a lease of the lands in question, which was granted under a recent order in council. The area of the lands leased is 567.20 acres; the lease is to be for 21 years renewable in perpetuity, but at a rental to be fixed with each renewal period of 21 years. The rental of the present lease is 50c an acre. (Nov., 1916, pg. 425.)

Additional Cars for London Street Railway.

The London St. Ry. has ordered in the U.S. 5 single truck, single end, p.a.y.e. cars for early delivery, though it is not anticipated that they will be obtained until December. They will be of the same type as those ordered in 1913, which were fully described and illustrated in Canadian Railway and Marine World for Dec., 1913, and Jan., 1914. Those cars were originally built with 10 cross seats, 2 longitudinal seats and 3 stationary seats, 2 longitudinal and 1 cross; the 2 longitudinal and 1 cross seats being at the forward end, and the rear end being occupied with 2 longitudinal seats; the aisle ran through the centre of the car. This arrangement was changed after the cars had been in service some time, experience showing that more aisle space could be obtained by arranging the cross seats on one side of the car, and placing a longitudinal seat the entire length of the car on the other side. This system will be followed in the new cars, viz.: a longitudinal seat along the left hand side of the car, and 5 cross seats and 2 longitudinal seats on the right hand side of the car. The longitudinal seat has a hand rod above it, instead of straps, and this is considered to be of greater convenience and utility than the usual hand straps. The longitudinal seats accommodate one less passenger than the cross seats. All seats are padded and covered with rattan, no springs being used, thus avoiding all trouble due to broken springs. The cars will be 32 ft. 4 in. long over all, with bodies 20 ft. 8 in. long. They will be 8 ft. 2 in. wide over sheathing. The cars ordered in 1913 cost approximately $4,500 each, but the ones just ordered will cost about $6,500 each.

The Edmonton Radial Ry. employes waited on the city utilities committee, June 11, to give reasons for objecting to operate one-man cars. The committee informed the men that it was not intended to run one-man cars throughout the city, and promised to give consideration to other matters raised.

The Ontario West Shore Ry. Fiasco.

The hearing of the case against the Toronto General Trust Co. by T. Stothers and the municipalities of Goderich, Kincardine, Ashfield and Huron, for an accounting of money received and expended in connection with the construction of the Ontario West Shore Ry., was concluded at Toronto, June 15, judgment being reserved. The municipalities guaranteed bonds for $400,000, and made an arrangement whereby unguaranteed bonds would be issued up to $200,000, the bonds being secured by a mortgage to a trustee, on the roadbed and assets of the railway. The defendants were appointed trustees, May 1, 1908, and were authorized to issue bonds up to $15,000 a mile of railway under contract to be built, on certificates signed by the Secretary of the company showing the necessary details. The money realized from the sale of bonds was only to be used for railway purposes and pro rata with the sale of the guaranteed bonds, and payment was to be determined upon progress certificates issued for 90% of work actually done, and signed by the engineer. The balance of 10% was only to be paid on completion of the railway. The railway was never completed, but all the money was paid out, and it is claimed that the trustees are liable for the amounts wrongfully paid. The Chief Engineer, V. M. Roberts, admitted having issued progress certificates in blank, while acting under orders from the President, J. W. Moyes, who has since disappeared. Gross negligence is alleged against the Trust Co., the plaintiffs claiming that the company should have taken precautions to see that the certificates were correct and in order.

As announced in our last issue, tenders were received by the liquidator, during May, for the purchase of a quantity of construction material, rails, etc., lying along the right of way. The tender of the Hydro Electric Power Commission of Ontario was the highest received, and was accepted. The prices accepted include: $40 a ton for track, including rails, fish plates, spikes, etc.; $45 a ton for a quantity of steel rails, not laid; $5 per 100 lb. for bolts out of track; $80 a ton for spikes out of track; $45 a ton for fish plates out of track; and 5c a lb. for structural steel. The poles and ties were not sold. The prices given above will enable the liquidator to realize about $120,000 on the materials mentioned.

Jitney Traffic Notes.

In Vancouver 285 jitneys have been licensed this year, and 347 men have qualified as drivers.

In Winnipeg the question of bonding jitney owners is still under consideration. The Automobile Club, which brought the matter forward, does not desire to interfere with the business except to the extent that necessary protection be afforded to the public.

The Guelph Radial Ry. hauls freight to the Ontario Agricultural College under an agreement made a number of years ago. A deputation, representing the city council, which owns the railway, was, on June 13, instructed to wait upon the Ontario Government in regard to the matter. The city contends that the rate paid for freight does not pay the cost of haulage, owing to the great increase in the cost of labor, etc., since the agreement was entered into.

Mainly About Electric Railway People.

J. G. Kilt, President of the projected Morrisburg & Ottawa Ry., died suddenly in Ottawa recently, aged 54.

W. J. Carrique, President, Canadian Street Car Advertising Co., who died at Montreal, Aug. 15, 1916, left an estate valued at $476,611, including 1,298 shares in the company, valued at $31,000.

W. Hodge, formerly Manager, Cornwall Ry. Light & Power Co., and Stormont Electric Light & Power Co., was presented with a silver desk set by the employes of the two companies, on June 17, on leaving.

Charles Lewis Wilson, who has been elected President, Canadian Electric Railway Association, was born at Boston, Mass., May 23, 1871, and from 1888 to 1891 was Master Mechanic, Eureka Milling Co., Toronto; 1891 to 1892, in Freight Department, G.T.R., Montreal; 1892 to 1904, in different positions on Toronto Ry.; 1904 to 1907, Traffic Manager, Toronto & York Radial Ry., Toronto; and since 1907, Assistant Manager, same company.

Arthur Gaboury, who has been re-elected a member of the Canadian Electric Railway Association's executive committee, was born at Montreal, April 6, 1875, and entered Montreal Street Ry. Co.'s service, June 4, 1894, since when he has been, to Oct., 1900, conductor and motorman; Oct. to Nov., 1900, Assistant Inspector; Nov. to Dec., 1900, night clerk, Cote St. barn; Dec., 1900, to Sept., 1903, day chief clerk, St. Denis; Sept., 1903, to May, 1906, Claims Agent; May, 1906, to 1907, Assistant Superintendent; and from 1907, Superintendent, which position he still occupies in Montreal Tramways Co.'s service.

James Dewar Fraser, director and Secretary-Treasurer, Ottawa Electric Ry., Ottawa, who has been re-elected a member of the Canadian Electric Railway Association's executive committee, was born at St. Andrews, Que., Mar. 26, 1851. From 1871 to 1882, he was accountant and telegraph operator, W. McClymont & Co., Ottawa; 1882 to 1891, Secretary-Treasurer, Ottawa City Passenger Ry.; in 1891 he was appointed Secretary-Treasurer, Ottawa Electric Ry., which position he still holds. In 1893 he was also appointed Secretary-Treasurer, Ottawa Car Co., now Ottawa Car Manufacturing Co., and in 1906 he was elected a director. In 1903 he was elected a director of the Ottawa Electric Ry. Co., and in 1914, also a director of the Ottawa Traction Co. In addition to these positions he is a director and Secretary-Treasurer, Wallace Realty Co. He was Vice-President, C. E. R. A. for 1914-15, and President 1915-16.

E. P. Coleman, who, as immediate past President, continues as a member of the Canadian Electric Railway Association's executive committee, was born at Taunton, Mass., June 14, 1867, and educated at the public schools there. He was from Feb. 9, 1885, to Feb. 9, 1896, in the Huber Printing Press draughting room at the shops of the Taunton Locomotive Manufacturing Co., with which his father and grandfather had been associated for many years; Jan. 1, 1896, to Sept. 1, 1900, Treasurer and General Manager, Attleboro Steam & Electric Co., Attleboro, Mass.; May 5, 1898, to Mar. 31, 1899, in U.S. service during the Spanish War as Second Lieutenant and Battalion Adjutant, 5th Massachusetts Infantry; July 1, 1899, to Sept. 1, 1900, General Manager, Plymouth Electric Light Co., Plymouth, Mass.; Sept. 1, 1900, to June 1, 1905, Vice President and General Manager, Consolidated Lighting Co., Montpelier, Vt.; June 1, 1905, to Mar. 1, 1907, in practice as consulting engineer, general, electric light, power, railway and quarry work, and Treasurer and Manager, Wetmore & Morse Granite Co., Montpelier, Vt.; Mar. 1, 1907, to Jan. 1, 1909, General Manager, Great Northern Power Co., Duluth, Minn.; Mar. 1, 1909, to Oct., 1912, Manager of Railways, and since Oct., 1912, General Manager, Dominion Power & Transmission Co., Hamilton, Ont. He has been a member of the Canadian Electric Railway Association's executive committee for several years, and was Vice President for 1915-16 and President for 1916-17.

Electric Railway Notes.

Edmonton Radial Ry. car barn mechanics are to have their wages increased to 50c an hour.

The Ontario Railway and Municipal Board, on June 19, confirmed the new schedule of fares for the Port Arthur Civic Ry. and the Fort William Municipal Ry.

The Ontario Railway and Municipal Board has approved the International Ry.'s standard freight tariff of maximum mileage tolls, O.R.B. no. 1, to be governed by Freight Classification 16.

The Montreal City Attorney advised the Board of Control, June 5, that the contract made with a company on June 12, 1912, to operate a system of autobusses in the city was null and void, because the company had not carried out its obligations within the time required.

The Montreal Tramways Co. proposes to prevent the practice of riding on the steps of its cars by fitting cars with a device which will close doors to prevent any additional passengers getting on. The device was tested in the presence of the City Engineer recently.

The Calgary Municipal Ry.'s car formerly used on the Ogden St. line, was partially destroyed by fire, June 10. T. H. McCauley, Superintendent, has recommended the commissioners to reconstruct the car as a combined freight and passenger car for use as required on the Ogden, Bowness and Sarcee lines.

The Vancouver, B.C., City Council has instructed its solicitor to notify the British Columbia Electric Ry. that the corporation holds the company responsible for damage done to the city's water system through electrolysis. A conference is being arranged between the officers of the council and the company.

The Toronto Suburban Ry. has bought three semi convertible, p.a.y.e. cars from Tuscaloosa St. Ry., Tuscaloosa, Ala., and also an express car and snow plough from Ridgeway, Pa. All of the foregoing have been received, in addition to four large interurban cars from Preston Car & Coach Co.

The British Columbia Legislature has authorized the Vancouver City Council, subject to certain conditions, to own and operate power plants. The city has for some years been prevented from developing hydro electric power plants for the supply of light and power, owing to a section in the corporation act of 1895, which gave a practical monopoly to the British Columbia Electric Ry.

The Mayor of Toronto stated, June 16, that valuators appointed by the city and the Toronto & York Radial Ry. had submitted figures relative to the proposed purchase by the city of the T. & Y.R.R. Metropolitan Division. If a satisfactory settlement cannot be arrived at after negotiation, the matter will, it is said, be submitted to arbitration.

One the latest type of one-man cars put on the Calgary, Alta., Municipal Ry., June 13, the front gates, where passengers make exit and enter, are equipped with folding steps, which are closed when the door is shut. This makes it impossible for persons to run and jump on the step before the car comes to a stop. Similarly, the door, after being opened, cannot be closed as long as a passenger has even one foot on the step. This obviates any possibility of a portion of a passenger's coat or skirt getting caught when the door is closed by the motorman before the passenger has fully alighted.

The Toronto Suburban Ry. service, on its extension from Lambton to Guelph, Ont., is being improved to meet the increasing business offering. Additional cars are being placed on the route, and service is being given as follows: Lambton to Guelph, 2 trips a day; Lambton to Georgetown, 3 trips a day, and Lambton to Cooksville, 8 trips a day. For the present, the large interurban cars operated on this route will not be run into Toronto, passangers transferring to the lighter built cars at Lambton. The Sunday traffic is increasing steadily, and a 2-car train is run each way on that day to accommodate passengers.

Edmonton Municipal Railway and Other Public Utilities' Results.

A. G. Davidson, City Commissioner, has supplied the following statement for the year 1916:

Electric light and power ..	$196.255.16	$64,788.82
Waterworks	173,220.90	24,410.04
Telephone	167,965.95	9,570.84
Power house (up to June 30, 1916)	119,468.34	39,430.71
	$656,910.35	$138,200.41
Street railway	132,755.88	*119,597.66
	$789,666.23	$18,602.75

*Deficit.

In commenting on the foregoing, the City Commissioner says: "Taking the utilities as one corporation, they show a surplus of $789,666.23 over and above operation and maintenance expenses, and a surplus of $18,602.75 over all charges. In this connection it may be pointed out that a private corporation does not lay aside what is known under municipal ownership as a sinking fund, to retire debentures at the end of a certain number of years. It would be sufficient for a private corporation to pay to its shareholders a moderate rate of interest on their shares and lay aside a certain amount for future contingencies, but utilities operated by a municipal corporation are not only required to pay all operating, maintenance and depreciation charges and interest, but are also compelled to put aside a large sum each year into the sinking fund for the redemption of the capital moneys invested, which is no doubt the safe thing to do, but when comparing municipal ownership with private ownership, this fact should be borne in mind. The street railway has a surplus of $132,755.88 over operation and maintenance expenses, and is earning 4 1/3% on the capital invested, and showed a betterment of $16,161.05 over 1915, which is considered satisfactory."

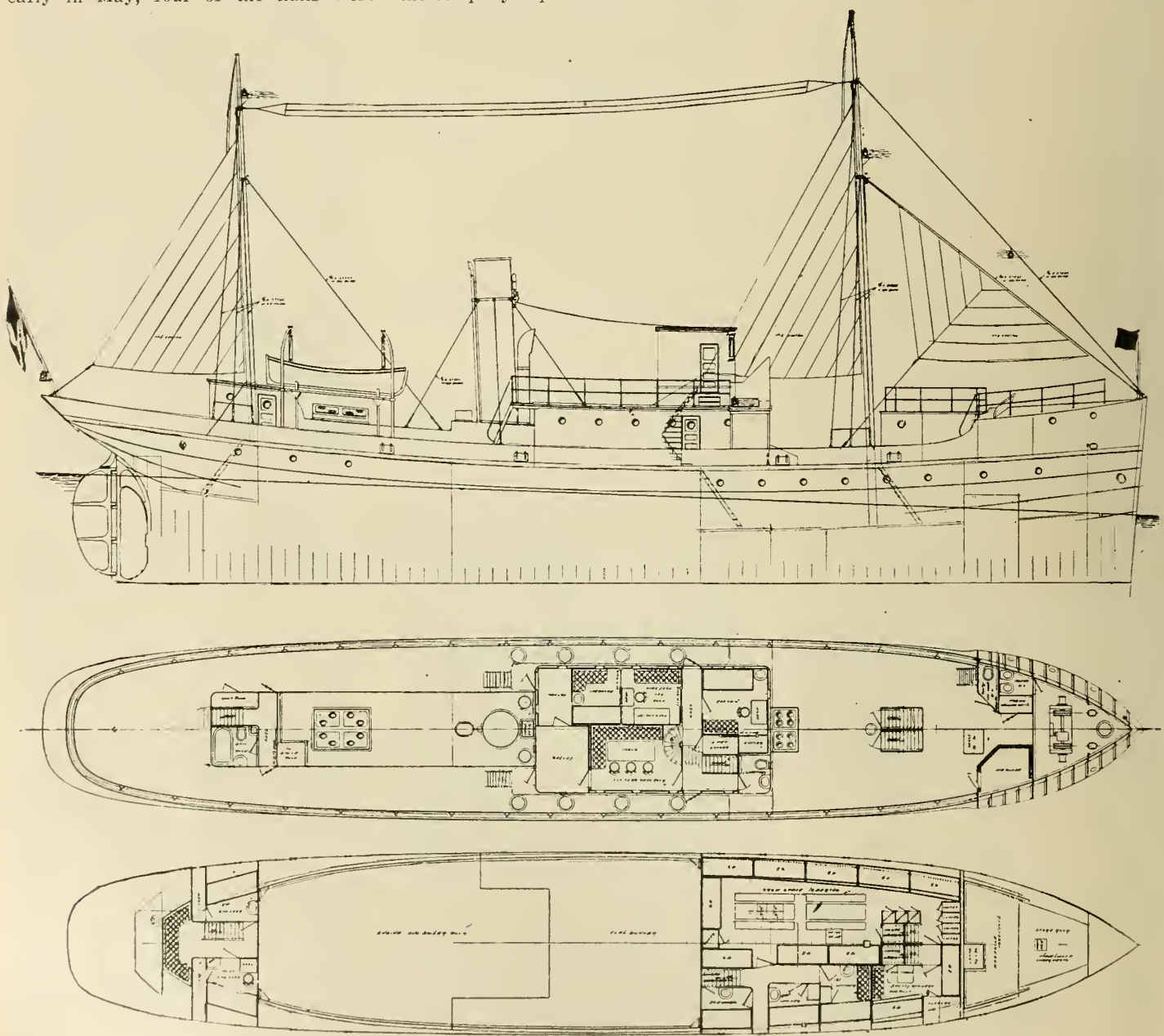
Marine Department

Launching of Canadian Government Vessels in Toronto.

One of the most unique. interesting, and probably unprecedented, events in Canadian shipbuilding, took place at the Polson Iron Works, Ltd., shipyards, Toronto, on June 16, when, starting at noon, four steel hulls for steamships for the Dominion Government were launched within 14 minutes. Six keels were laid early in May, four of the hulls were down draught, and working at 180 lb. steam pressure. The vessels will be fitted with electric light, are steam heated, and have evaporating outfits fitted complete for salt water service. The machinery, boilers, auxiliaries, spars, booms and joiner work were all ready for installation when the launching took place, and the company expects to make a record in

Maximum speed, 158 ft. a minute.
Maximum list, 22°.
Metricentre in launching condition, 3 ft. 2 in.
Launching attachment used, tricker and sling.
Weather, cloudy and cool.
Total time required for 4 vessels, 14 minutes.

The christening of the vessels was performed by Mrs. Hugh McKay, of St. John, N.B., and Miss Hazen, daughters of Hon. J. D. Hazen, M.P., Minister of Marine and



Profile and Plan Views, Canadian Government Vessels built in Toronto.

launched on June 16, as stated above, and the other two were expected to be ready by the end of June, or early in July.

The dimensions of the vessels are: length over all, 140 ft.; breadth, 23½ ft.; depth moulded, 13½ ft. The machinery will consist of fore and aft compound surface condensing engines; cylinders 18 and 38 in. in diameter x 24 in. stroke, developing 500 h.p. The boiler equipment will consist of water tube boilers, having the delivery of the vessels during July, which will anticipate the contract delivery date by about two months.

Following are details of the launching arrangements, etc.:

Travel from keel to end of ways: Outside boats, 18½ ft.; inside boats, 49½ft.
Pitch of ways, 1¼ in. to 1 ft.
Area of sliding ways, 120 sq. ft.
Weight per ft. of sliding ways, 2,500 lb.
Lubricant, 100 lb. tallow; 12 lb. soft soap, per hull.
Number of ways used, 4 per pair of boats.
Hulls listed shorewards, 16".
Weight of each hull, 150 tons.

Fisheries, and who was present, together with G. J. Desbarats, C.M.G., Deputy Minister of Naval Service, and Admiral C. E. Kingsmill, Director of Naval Service, as well as a number of prominent Toronto citizens. As the four hulls were launched, they were christened Ypres, Vimy, Messines and St. Julien, respectively. The other two will be christened St. Eloi and Festubert. The general arrangements were in charge of J. B. Miller, President, and A. H. Jeffrey, Manager and Secre-

tary, Polson Iron Works, the launching being directly in charge of W. Newman, the company's Naval Architect and Works Manager. After the launching refreshments were served to the invited guests in a marquee in the company's yard.

Mr. Hazen, in the course of a brief speech, said: "The successful termination of the war will depend, to no small extent, on the ability of the British Empire and our allies to maintain sufficient shipping to carry on essential trades. The successes that we have achieved all along since the war commenced are due in no small measure to the efficiency of the British and allied mercantile fleets. Lloyd George has said quite recently that one of the best ways of carrying on the war is by the production of ships, and then more ships. Let me remind you that the losses to shipping, as the result of submarines and other enemy agencies, have been enormous, although they have not nearly approximated the Germans' boastful expectations and predictions. They have, nevertheless, been serious, totalling up to the end of April last about 5,811,100 tons. How stupendous this loss is, you will understand when I point out that the replacement value approximates, if it does not exceed, one thousand million dollars. But, notwithstanding these enormous losses, there is the comforting thought that the construction of new ships has, during the period of the war, been well maintained,, more especially by Great Britain and the United States.

"Without entering into any details, I may say that the total of the world's mercantile marine tonnage at the close of 1916 was 48,683,136 tons. Even if it should so happen that the present ratio of destruction should be maintained for another year or, say, until the end of June, 1918, if we maintain the present ratio of construction, the net reduction of the world's tonnage would be only about 2%. Recent reports, however, go to show that there is no probability of the present ratio of destruction being maintained. There is tremendous activity in ship construction in Great Britain, the United States and Japan, and there is evidence that the ratio of construction in the Canadian shipbuilding yards from coast to coast will be more than maintained. There are at present under construction in Canadian shipyards merchant steamships totalling approximately 150,000 tons carrying capacity. The cost of producing this tonnage will be in the vicinity of $25,000,000. In addition, there are building in various Canadian yards wooden vessels aggregating a total carrying capacity of about 30,000 tons."

Referring to the obstacles encountered by Canadian shipbuilders before the war, Mr. Hazen said that owing to the small wages paid in shipyards in Great Britain it was almost impossible for Canadian firms to enter into competition. After the war Great Britain will require all the tonnage that will be available to transport troops to the colonies and take care of her commercial interests. He stated that in connection with the operations at Saloniki there were over 200 ships engaged in the commercial trade. He predicted that after the war there would be a great development in the shipbuilding industry of Canada, a condition which would prevail for some considerable time. In fact, he believed that shipbuilding would eventually be one of the greatest of Canada's commercial industries.

Canadian Government Vessels on the Ways in Toronto.
This illustration shows the four hulls just prior to being launched on June 16. Two other hulls will be noticed at the back of the picture.

Insuring U. S. Seamen.—The U. S. Treasury Department announces the completion of arrangements for the insurance against war risks of masters, officers, and crews of U. S. merchant vessels by the Bureau of War Risk Insurance of the Treasury Department in accordance with the provisions of an act approved June 12. Policies thus protecting seamen of the U. S. merchant marine will be issued by the bureau in connection with vessels sailing from the U. S. on and after June 26 and vessels sailing from abroad to the U. S. on and after July 10.

Channel Markings in Shoal Water in the St. Lawrence.—In some shoal waters, especially on the coast of the Gulf of St. Lawrence, it is the practice to mark the edges of channels by driving bushes or balises in the mud banks along the edges of the deeper water, instead of, or in addition to, buoys. The Marine Department announces that hardwood bushes are to be used on the starboard side of the channels, and evergreen bushes on the port side.

United States Committee on Inland Water Transportation.

The Council of National Defence has appointed an inland water transportation committee, with Gen. W. M. Black, Chief of Engineers, U.S. Army, as chairman. Daniel Willard, President Baltimore & Ohio Rd., and chairman of the council's advisory commission, who has special charge of matters relating to transportation, is a member ex officio. The other members of the committee are: W. S. Dickey, vice chairman, Kansas City, Mo., President Kansas City-Missouri River Navigation Co.; George E. Bartell, President of the Philadelphia Bourse; Capt. J. F. Ellison, Cincinnati, formerly secretary of the National Rivers and Harbors Congress; Joy Morcon, Chicago, director in many financial, mercantile, and transportation companies; J. E. Smith, St. Louis, President Mississippi Valley Waterways Association; M. J. Sanders, President New Orleans Board of Trade, representative Harrison-Leyland Lines; Lieut. Col. C. Keller, of the Corps of Engineers, who will act as secretary of the committee.

It will be the committee's duty to bring together the companies engaged in inland water transportation, including those on the Great Lakes, in order to meet the war situation and increase and make more efficient the freight carrying facilities of the country's waterways. It is hoped through the committee's agency to aid in some degree in meeting the existing shortage of freight cars in the sections where water transportation is possible.

Shipbuilding in the United States for War Needs.

The United States Shipbuilding Board, Emergency Fleet Corporation, which has charge of the U. S. Government's programme for building cargo steamships, is composed of five trustees, namely, Wm. Denman, San Francisco, President; General G. W. Goethals, New York, General Manager; J. A. Donald, New York; W. L. Solean, R. H. Bailey, Jr., T. C. Abbott and E. P. Bertholf, Washington.

Canadian Railway and Marine World was informed some little time ago that the Emergency Fleet Corporation would build 1,000 wooden cargo ships, especially for the Atlantic traffic. We are now advised that it is expected that approximately 200 wooden steamships, and 350 steel ships, will be built under the corporation's supervision within the next 18 months. The approximate dimensions of the wooden ships are: length 290 ft., beam 46 ft. The steel ships will differ in size, depending on the type that the shipyards are capable of building, or have been in the habit of building.

On June 19 it was announced that the following contracts had been given:—Seattle Construction & Drydock Co., Seattle, Wash., 10 steel steamships; Foundation Co., Newark, N.Y., 10 wooden hulls; Groton Iron Works, Noank, Conn., 12 wooden hulls; Ship Construction & Trading Co., Stonnington, Conn., 2 wooden hulls; Sanderson & Porter, New York, 10 wooden hulls; Maryland Shipbuilding Co., Baltimore, 6 wooden hulls.

Gen. G. W. Goethals, eneral Manager, U. S. Shipping Board, Emergency Fleet Corporation, has ordered through the Southern Pine Emergency Bureau lumber for 100 ships to be sawed by the southern mills at an average price of $35 per 1,000 ft. at the mills.

Government Statements on Shipbuilding in Canada.

In the House of Commons on June 1, Hon, W. Pugsley asked if the government had any information to give in regard to building of wooden vessels in Eastern Canada and said that the Imperial Munitions Board in giving 2,500 tons as a minimum for the vessels they were ordering for the British Government were discouraging shipbuilding in Eastern Canada. The Minister of Marine, in replying, and in the course of further discussion, said among others: "The reason why the Imperial Munitions Board is not prepared to place contracts for wooden vessels of less than 2,500 tons is because of absolute instructions on that point from the British Government, and the vessels which the British Government wish are limited to 2,500 tons, and they are not, up to the present, willing to authorize the building for them of smaller vessels. That is a policy, of course, which they have to determine; they are the owners of the vessels; and it is for them to declare what sort of vessels they require. The junior member for Halifax stated the other night that vessels of that size could not be built in the Maritime Provinces, because it was impossible to secure the lumber to build them. I communicated this statement both to the Colonial Secretary and to the Director of Shipping, Sir Joseph Maclay, pointing out that I trusted they would reconsider the matter, and that in the public interest they would see whether or not vessels of a smaller size were desirable for their purposes, and, if they were, that orders would be placed in Canada for their construction. I have not received an answer to that communication yet. The answer, of course, has to be decided by the British Government, through the Imperial Munitions Board. There are being constructed in Nova Scotia at present by private individuals 48 wooden vessels, the builders believing that there will be a good margin of profit on vessels of that sort, and that it will prove a profitable undertaking. The information I have is to the effect that the vessels are from 1,500 tons down to about 100. The junior member for Halifax, however, said that he did not think any vessels were being built in the province as large as 1,500 tons. He said that the largest under construction would be no more than 1,000 tons, and I think he even mentioned 600. If that is the case, the information that was sent to me by a gentleman who I thought was very well informed as to conditions in Nova Scotia, must be erroneous.

The junior member for Halifax pointed out the very great difficulty there would be in building large wooden ships in the lower provinces on account of the difficulty in getting timber. Still, there considerable activity in shipbuilding in Nova Scotia, as is evidenced by the 48 vessels now under construction. From the information I have received there is no need to give a bonus to encourage the construction of wooden vessels. The reason is that these vessels can be built and operated at a very substantial profit, providing they escape the submarines and mines, on account of the high freight rates.

The question of building ships in this country for use after the war, to be owned by this government, is a very important one. Hon. gentlemen will, of course, understand that it would involve the expenditure of a very large sum, and at present when such very large sums have to be raised for carrying on the war, the question of raising additional millions would cause the Finance Minister a great deal of concern; it is a policy that cannot rashly be undertaken, but will require the most careful consideration. If private individuals are willing to go into the building of ships of this sort, the government would not be justified, I think, in entering into competition with them. One of the difficulties in the past about private individuals entering into the building of ships in this country has been the danger of having the ships, after they were completed, commandeered for war purposes, and if commandeered by the British Government they would not earn the ordinary commercial rates, which have been fixed by a special committee in England and which are not as high as the ship could earn under private ownership.

There are under construction at the Vickers works in Montreal 6 cargo steamers of 7,000 tons each. Other vessels are also being constructed at that yard, one of 2,630 tons, and others of less tonnage. The shipyard employs over 2,000 men and keeps them as busy as possible. At the Davie shipbuilding yards, Levis, there is a steel vessel of 5,000 tons being constructed. At Sorel, in certain private shipyards, there is a great amount of activity in shipbuilding. Near Quebec, on the Island of Orleans, a company with which James Playfair is connected, is building 4 wooden ships of from 1,500 to 2,000 tons, and I am informed that a large portion of the lumber is being brought from British Columbia. A gentleman was here today who is largely engaged in shipbuilding, and he states that he has made arrangements for bringing a large quantity of British Columbia lumber to points on the St. Lawrence, where he is going to construct some 8 or 10 wooden ships, as large, I presume, as those that are being built on the Island of Orleans, from 1,500 to 2,000 tons each. The ships that are being constructed at the Island of Orleans are well on the way to completion, and work has been commenced on two others.

The Nova Scotia Steel and Coal Co., of New Glasgow, N.S., has under construction three cargo steamships of a total tonnage of 6,800. The Shelburne Shipbuilders Co. is building a wooden cargo steamer of 320 tons. Robert Rutledge, of Sheet Harbor, N.S., is building a wooden cargo steamer of 325 tons. The Quebec Shipbuilding and Repairing Co., Isle of Orleans, is building two auxiliary schooners of 2,490 tons, and a tug boat is being built at Sorel of 410 tons. In addition, there is a large amount of other construction which I do not care to speak about here, going on at the Sorel shipyards, at the Davie works, Levis, at Polson's, Toronto; at Canadian Vickers, Montreal, and at other shipyards throughout the country. On the Great Lakes the Port Arthur Shipbuilding Co. is building 4 cargo steamships aggregating 9,748 tons. The Collingwood Shipbuilding Co. is building one steel cargo steamship of 7,988 tons, and two steel oil tankers of 4,800 tons. The Polson Iron Works, Toronto, are building 2 cargo steamships of 4,400 tons each and 6 cargo steamers of 3,500 tons each, in all 8 steamships, in addition to other marine construction work which is going on there. The Thor Iron Works, Toronto, has two steel cargo steamships in the stocks of 5,000 tons each. The Georgian Bay Shipbuilding and Repairing Company, Midland, Ont., launched a large steamer there recently and other construction is in progress. On the Pacific coast a great deal of shipbuilding is carried on. The Coughlin Co. has a contract for 5 large steel steamships of 8,800 tons each, and in the Wallace yards 2 steel vessels of 4,600 tons each are in course of construction.

"I have a list of wooden vessels being built at points on the Atlantic coast aside from those that are building under contracts placed by the Munitions Board. This list is complete so far as I know at present. It may not be uninteresting to call attention to the fact that the British authorities have issued an order excluding sailing vessels from the war area. This step has been taken because of the risk to which these vessels are exposed from submarines, through their inability to escape. In reaching this decision the authorities are moved, I assume, by the consideration, not only of loss of vessels, but of the loss of cargoes as well. They have made a request of us to adopt the same policy and to exclude Canadian sailing vessels from the war area. I suppose that the possession of auxiliary power by a vessel would make the danger much less, and I should think that would make a difference. The following is the list of wooden sailing vessels now under construction, the figures appended giving the gross tonnage:

J. W. Comeau, Comeauville, N.S., 1 schooner, 329.
Dr. McDonald, Meteghan, N.S., 1 schooner, 544.
John Deaveu, Meteghan, N.S., 1 schooner, 400.
I. Comeau, Little Brook, N.S., 1 schooner, 250.
O. Blinn, Grosses Coques, N.S., 1 schooner, 350.
Theriault Bros., Belliveau Cove, N.S., 1 schooner, 350.
J. N. Rafuse, Bridgewater, N.S., 3 schooners, 755.
Leary & Sons, Bridgewater, N.S., 2 schooners, 265.
Robar Bros., Bridgewater, N.S., 1 schooner, 130.
William Naugler, Bridgewater, N.S., 1 schooner, 300.
W. R. & C. A. Huntley, Parrsboro, N.S., 1 schooner, 490.
Wagstaff & Hatfield, Port Greville, N.S., 1 schooner, 400.
G. M. Cochrane, Fox River, N.S., 3 schooners, 1,349.
James E. Pettis, Spencer's Island, N.S., 1 schooner, 425.
T. K. Bentley, Advocate Harbor, N.S., 1 schooner, 449.
Esther Harkinson Shipping Co., Belliveau Cove, N.S., 1 schooner, 360.
Peter McIntyre, St. John, N.B., 1 schooner, 450.
Southern Salvage Co., Liverpool, N.S., 2 schooners, 530.
J. S. Gardner, Liverpool, N.S., 1 schooner, 340.
W. K. McKean Co., Liverpool, N.S., 1 schooner, 400.
Albert Parsons, Walton, N.S., 1 schooner, 400.
G. A. Cox, Shelburne, N.S., 1 schooner, 200.
W. C. McKay & Son, Shelburne, N.S., 4 schooners, 620.
Estate Joseph McGill, Shelburne, N.S., 1 schooner, 160.
J. Ernst & Son, Mahone Bay, N.S., 2 schooners, 520.
J. McLean & Sons, Mahone Bay, N.S., 1 schooner, 95.
Smith & Rhuand, Lunenburg, N.S., 3 schooners, 332.
Lewis Hardwood Co., Lewiston, N.S., 2 schooners, 1,000.
J. Brown, Public Landing, N.S., 1 tow barge, 50.
E. F. Williams, Dartmouth, N.S., 1 schooner, 350.
Quebec Shipbuilding & Repairing Co., St. Laurent, Que., 2 schooners, 2,600.
C. Griffin, Isaacs Harbor, N.S., 1 schooner, 40.
J. A. Balcom Co., Ltd., Margaretsville, N.S., 1 schooner, 400.
J. X. Lenteigne, Lower Caraquet, N.B., 1 schooner, 28.
Meteghan Railway & Shipbuilding Co., Meteghan, N.S., 1 schooner, 470.
Shelburne Shipbuilders, Ltd., Shelburne, N.S., 1 schooner, 350.
R. Rutledge, Sheet Harbor, N.S., 1 schooner, 300.
J. W. Raymond, Port Maitland, 1 schooner, 375.
Robin, Jones & Whitman, Liverpool, N.S., 1 schooner, 340.

"None of these vessels is large, but the list shows that there is a very considerable activity in shipbuilding. The people of the Maritime Provinces, so far as I can learn, have not shown much anxiety to engage in the building of larger vessels.

"Six or eight months ago a gentleman who was interested in shipbuilding in Montreal told me he was going to proceed with the construction of 10 schooners from 2,500 to 3,000 tons each, and that he would as soon build them in the Maritime Provinces as anywhere if there were people there to take the contracts. I communicated with theh St. John Board of Trade and others in St. John, and told them of that proposition. After enquiry my correspondents wrote me that they could not find anybody who was willing to enter into a contract for the construction of such vessels at that time. The question of price was not raised; it would have been satisfactory. These people said that shipbuilding in New Brunswick had become almost a lost art. It flourished years ago. In those days there used to be ship carpenters, sail makers, caulkers, and other ship's tradesmen, but these have pretty well disappeared. At any rate the parties with whom I communicated could not find any one willing to enter into a contract for the construction of these ships. I say this to show that at present there are difficulties in the way of constructing vessels of large size. This applies especially to New Brunswick. In Nova Scotia shipbuilding has been better maintained, schooners and other vessels have always been built in that province, and that accounts, probably, for the greater shipbuilding activity in Nova Scotia to-day. As I understand it, if there are builders who will build what the British Government requires—and they must be the judge of their own requirements—they will have no difficulty in getting contracts from the Imperial Munitions Board.

There is no doubt that there is a greater development of shipbuilding in Canada than the country has known for many years. I believe as a result of what is going on today the shipbuilding yards in Canada will be placed in a considerably better position than they have been at any time during the past 25 or 30 years. I further believe that when the war is over they will be able to compete on more even terms with the shipbuilders of the United Kingdom. But up to the present Canadian shipbuilders have had no protection. British registered ships built in the Old Country have come into our ports to compete with the ships that were built in this country without paying any duty even upon their equipment and the things that were necessary to enable them to sail their ships. But, there has been an enormous advance in wages in the United Kingdom. My belief is that wages there after the war is over, will never get down to the point at which they were before the war and which gave the shipbuilder there an undue advantage in competition with the shipbuilders in this and other countries. Wages in the United Kingdom are quite as high as they are in Canada and I do not believe they will come down for some years, because there will be great activity after the was is over in building ships. The troops will have to be brought back, the munitions and equipment will have to be brought from the front and in consequence of submarine attacks there will be fewer ships than there were at the outbreak of the war. To carry on the business of the world there will be a great demand for ships, in consequence of which the shipyards of Great Britain and Canada will have a great deal of work to do and they will require to build a good many ships for carrying on the business for some years to come. I expect the Canadian shipyards, with the impetus they are getting now, will be able to compete with the shipbuilders of the United Kingdom. You find shipyards with contracts for 6 and 8 large ships and as a result their yards will be better equipped and in a very much better position to compete than they were before.

"Some contracts were placed in Canada for neutral governments or owners with the full approval of the British Government. That approval was obtained before the contracts were entered into. In most cases these vessels have in the course of construction been commandeered for the British Government and instead of flying the flag of neutral countries they will fly the British flag and be used for the purposes of Great Britain in connection with the war and the carrying on of her trade."

In the course of the discussion the Minister of Trade and Commerce said:—"The Imperial Munitions Board are building such vessels as they are building on the order of the British Government, and they build to the specifications that the British Government requires. The Canadian Government is furnishing no shipyards, making no contracts, planning and building no vessels other than the 2,500 tons vessels that are being built by the Imperial Munitions Board."

Grounding of the s. s. Cape Corso.

An investigation was held recently into the causes of the grounding of the s.s. Cape Corso in the vicinity of Cape Chat in the Gulf of St. Lawrence, May 15. Following is a summary of the judgment given in Montreal, by Capt. L. A. Demers, Dominion Wreck Commissioner, concurred in by Capts. F. Nash and C. Lapierre, as nautical assessors. After reviewing the evidence, the court finds that the story as told by the master, Capt. A. Henderson, does not correspond with the entries in the scrap log. Where he stated straight courses had been steered from Fame Point to the scene of the casualty, the log indicates that varied courses were steered. The court has a suspicion that the master attempted to mystify it when he stated that immediately before the vessel struck he went to the bridge and ordered full speed astern, which he afterwards corrected by saying that the order had been given by the second mate before he reached the bridge. The evidence indicates that the master's actions were not in accordance with what is expected of a careful mariner. He is a stranger in these waters, and said he made good courses in crossing, making Cape Ray as expected, though this is contradicted by the second mate, who said the vessel had to be hauled in in that vicinity. The weather is said to have been thick, the scrap log says rain, and the evidence shows snow. The master says the vessel struck lightly, while the log reports that she struck heavily. The court holds that when a change of course was made, in heading the vessel directly for the land, speed should have been reduced, soundings taken, and the master should have remained at his post until the object for which the course had been changed had been attained. As he failed on these points, the court holds him at fault, and unhesitatingly affirms that he navigated his vessel carelessly.

An examination of the scrap log reveals the fact that a wholesale erasure of entries formerly made by the second officer for the period prior to, and at the time of the grounding, had been made, and entries concocted subsequently and inserted to correspond with the story told before the court. As a result of this the court was convened a second time to secure a more thorough explanation of the erasures, and the second officer stated that it was the chief officer's suggestion that he erased with a view to abbreviate the entries made. The chief officer offered unsatisfactory explanations regarding the abbreviations, and the master acknowledged having himself made certain entries regarding a course in the place of one rased, but could not recollect what was marked there before. The evidence of the several witnesses differed, in fact the whole evidence and the number of erasures in the scrap log have been very crude attempts to mystify the court. The contradictions in the evidence at both sittings, the tampering with the log, the courses given in evidence and those found in the log, all indicate and cause the court to conclude, that the master did not navigate his vessel prudently, that he attempted to mystify the court, and that he wilfully altered a course entered in the scrap log. The first officer's conduct in advising the second officer to abbreviate his entries on the navigation of the vessel is reprehensible. No other erasures are found in any part of the log. The court reprimands the chief officer, Fred Stark, severely.

The master, in an indirect manner, appeared to reflect on the operation of the Cape Chat fog signal, but enquiries proved that it had been in operation constantly for 32 hours, covering the whole period of the casualty, and for a considerable time before and after the accident occurred.

Since war conditions have existed, the court has exercised leniency, bearing in mind the mental strain to which vessel masters are at present subject, and it is its intention to continue this practice so long as present conditions obtain, with errors of judgment, and when the evidence indicates that elementary precautions have been taken to bring the vessels to their respective destinations without mishap. In this case, had the log not been tampered with in such a barefaced manner, the court would have taken into consideration the fact that the master was surrounded with inexperienced officers and boys of few months experience, who were detailed to steer the vessel, but for the reasons mentioned, the certificate of the master, A. J. M. Henderson, no. 026394 is suspended for two months from May 19. Regarding the second officer, John Shaw, his alteration and erasure of entries in the log, whether voluntarily or under pressure is deserving of the strongest condemnation, and not knowing what led to the tampering, the court does not deal with his certificate, but as he is very young and inexperienced, he is severely censured and reprimanded. The court retains the scrap log for transmission to the Board of Trade in England, with other documents.

A. W. Atwater, K.C., represented the North of England Protective Association, and R. T. Heneker, K.C., looked after the interests of the master and second officer on behalf of the Imperial Merchant Service Guild.

Proposed Government Control of Lake Freight Rates.

Some reference was made in Canadian Railway and Marine World for June to the proceedings of the House of Commons committee, which is dealing with the revision of the Railway Act, especially regarding the clause which gives the Board of Railway Commissioners jurisdiction over the rate for traffic carried by any railway company by sea or by inland water, between places in Canada, so far as deemed applicable by the board, and which clause it was proposed to amend by making it apply to all freight traffic carried by any carrier by water between places in Canada. This amendment was strongly opposed by Francis King, M.A., Counsel for the Dominion Marine Association, as well as by various boards of trade and chambers of commerce and others throughout the provinces chiefly affected.

Mr. King outlined the opposition to the amendment proposed, and reviewed to some extent the opposition made to similar proposals in 1914 and 1915. He emphasized the point that the opposition was to the amendment only, and not to the general clause as it has stood for several years in the Railway Act, and confuted the suggestion made by a member of the committee that the questions dealing with the vessel traffic and railway traffic were analogous. So far as traffic on vessels operated in connection with railways was concerned, the association had no objection to it being under the board's jurisdiction. In the case of a railway, it enjoys a monopoly on the road it uses, and which the government helped to build; it operates between definite points on definite schedules on a fixed roadway. It does not necessarily tie up a whole train and train crew in taking on and unloading freight, and in any event it does not as a rule carry freight and passengers on the same train, although it may so carry express traffic, and it is not subject to marine risks, with insurance against them. Railway traffic does not include the infinite variety of classes of carriers to be found amongst the vessels trading in any one district, which includes everything from a large vessel to a gasoline launch, and it is not subject to variations in carrying capacity due to fluctuations in the available draught of water. Freedom from control of rates as suggested is of itself a remedy for high rates or a monopoly, as it ensures the freedom of absolute competition, not only between boats now on the lakes, but also as a factor in the control of railway rates. Under present conditions the lake carrying companies are working under tremendous difficulties, a large amount of tonnage having been removed from the lakes to the ocean, and rates increase when vessel capacity goes down. From time to time it has been suggested that the coasting laws be abrogated, thus allowing U.S. vessels to compete with Canadian vessels on their own ground. The Dominion Marine Association has consistently opposed this course, but if a reciprocal abrogation were arranged Canadian vessels then could join in the larger traffic on the other side, coal up and ore down. The association has no agreement or understanding amongst its members regarding the regulation of tolls or traffic. A number of years ago some such agreement was made, but it was realized that a mistake was made, and it was entirely outside the constitution and should never have been attempted. There is no arrangement with any U.S. marine associations or any shipping organization regarding rates, and there never was such an arrangement. The members of the association could be described as common carriers and carriers, as it is contended that so far as the bulk freighters are concerned, they are not common carriers, who are supposed to take whatever is delivered on the dock and carry for the public in the ordinary way as a railway does. He contended that the act as it stands at present should remain in force, so far as the clause under discussion is concerned, that is, that the vessels which carry in connection with the railway companies should come definitely under the board's jurisdiction, in accordance with the words of the statute, but it is not necessary nor desirable to go further. So far as the U.S. is concerned, bulk freight carriers on the Great Lakes are not under the jurisdiction of the Interstate Commerce Commission, but package freight vessels operated in connection with the railway companies were included in the Interstate Commerce Act when it became law. It was then proposed to include in that act the port to port traffic of package freight vessels, but that point was eliminated from the bill. He claimed that the tendency under the board's jurisdiction would be to switch export grain from Canadian to U.S. channels. At present there is more Canadian grain exported from U.S. ports than from Canadian ports, and this, it is claimed, is due to shortage of facilities at Montreal, due partly to the elevators there being used for storage purposes, the longer haul through the St. Lawrence, the higher insurance rates, and the alleged ocean combine, which absorbed any difference made in the tariff on the lake route, which was made in an effort to hold the lake trade to the Canadian ports. The control of tolls and tariffs by the board would be considered most objectionable, not as a question of the vessels' interests, but as not being in the interest of the trade and commerce of the country. It would increase the tendency to drive grain out of the Canadian channel into a channel where it would run through Buffalo. Over 50% of the grain from Fort William runs through Buffalo, chiefly because the shipper orders it by that route, owing to a lower through rate.

Several other speakers were heard by the committee, the objections being more or less the same, with a few additional points of evidence here and there, which strengthened the case against the proposed amendment. The cumulative effect of the evidence, and the strong position occupied by the opposition, caused the committee to strike out the objectionable part which it was proposed to add to the section, thus leaving matters concerning control of lake freight rates as they were.

Permissible Draught on Welland Canal.—Notice was given recently that from June 15, until further notice, no vessel would be allowed to enter and pass down through the Welland Canal, drawing more than 14¼ ft., and no vessel will be allowed to enter and pass up, drawing more than 14 ft.

Welland Canal Accident.

The wooden steamship Nipigon, owned by W. J. Harlow, Toledo, Ohio, upbound and light, struck and carried out the two head gates of lock 1, Welland Canal, on May 26, about 4.45 o'clock p.m. The vessel and gates were carried out into the harbor below. Owing to the fact that the old and new canals are connected above lock 1, a great quantity of water was released, and it was not possible to close the two foot gates until 4.15 a.m. on May 27, when the water had ceased to lower further. The large quantity of water coming down the old canal, which is used for water power, and from the Cataract Power Co.'s tail race, made it very difficult to close the lower lock gates. When the gates were closed, which operation required but a minute or two, there was a head of approximately 6 ft. of water acting upon them. Two spare lock gates were placed in position and the lock was ready for operation on May 27, at 2 p.m., but navigation could not resume as the reach had not sufficiently filled up. Traffic began again at 6.45 p.m., having been interrupted for 25 hours. About 17 downbound and 4 upbound vessels were delayed for periods varying from the full 26 hours to a few hours.

The Nipigon was not seriously injured. Her propeller was badly damaged, two of the blades being broken off when the boat was carried by the rush of water into the west docking. The estimate of the cost of repairing the damage to canal property is $4,000. It appears that the accident was due to excessive speed of the vessel in entering the dock. The engines were not working ahead, but centred. They could not be reversed in time to avert the collision with the upper gates. A wire cable placed on a snubbing post slipped through the compressor.

Shipbuilding Possibilities at Quebec.

The Quebec Board of Trade, of which J. G. Scott, ex-General Manager, Quebec & Lake St. John Ry., is President, is urging the claims of Quebec as the most suitable location for a large shipbuilding plant, and recently took steps to bring the matter before the British Premier, in view of the extensive shipbuilding program being undertaken in Canada in British interests. The British Premier referred the matter to the Imperial Munitions Board in this country, and the Chairman communicated with the Board of Trade to the effect that the Munitions Board would be pleased, if Quebec interests made the necessary investment and made a serious effort to equip yards for the construction of vessels, to co-operate with the city, or company which may be established, to secure the necessary plates for steel shipbuilding, provided the company give a satisfactory price for building vessels, and an unmistakable assurance that they will be completed within the time specified on contracts.

During the campaign which the Board of Trade has been carrying on for some time to induce some of the larger shipbuilding firms to locate in Quebec, invitations were extended to several companies in Great Britain, Ireland and France. Several of these have replied, mostly to the effect that the matter had been under consideration previously, but owing to the lack of government support, and to other causes, proposals for such establishments had been dropped.

Shipbuilding Activities Throughout Canada.

British Columbia.—While no definite official announcement is yet available, there are a large number of probably authentic reports as to what R. P. Butchart and J. W. Troup, who are representing the Imperial Munitions Board in British Columbia, are doing, and they are said to have let a number of contracts for wooden steamships. The reports are summarized as follows:

Cameron-Genoa Shipbuilders, Ltd., has been given a contract for 4 steamships.

British Columbia Construction & Engineering Co. will, it is said, get a contract for building some steamships at New Westminster.

Western Canada Shipyards, Ltd., Vancouver, has, as stated more fully in another paragraph, been given contracts for 6 steamships.

Peter Lyall & Sons, contractors, Montreal, have leased or bought Wallace Shipyards, Ltd., yard No. 2 and have been given an order for 6 steamships.

The British Columbia Trades Association has been interviewing Messrs. Butchart and Troup, with a view of having engines, hoisting gear and other equipment for the steamships built in B. C. shops.

The Foundations Co., Ltd., of Montreal, which is really a branch of the Foundation Co., New York, etc., has been given a contract for 5 steamships, which may be increased to 9. It has leased a 10 acre site on the former Songhees Indian reserve, Victoria.

Wallace Shipyards, Ltd., North Vancouver, has been operating two yards, from which it has already launched 3 auxiliary schooners for Canada West Coast Navigation Co. The 4th will be launched shortly, leaving 2 more to complete the order. It will probably be given a contract for 6 steamships by the Imperial Munitions Board.

In reference to the standard type of wooden vessel to be built in Canada, it was stated in our last issue, on pg. 245, as having been officially given out in British Columbia, that the vessels would be propelled by steam, with triple expansion engines of about 950 i.h.p. We are officially advised that the engines will have about 1,000 i.h.p.

J. J. Coughlan, of J. J. Coughlan & Sons, on returning to Vancouver recently, is reported to have said: "Our first boat is well under way and will take to the water in November at the present rate of construction. We are now laying the keel for the second and third vessels. The second vessel will be launched in December and the third in February next. We are contemplating clearing away space for a fourth keel. When the first vessel is launched we will lay the keel for the fifth vessel on the berth which she vacates and the sixth vessel will be built on the berth now occupied by the second one." Mr. Coughlan added that the first vessel is for a British concern and the other five for the British Government.

Western Canada Shipyards, Ltd., has been organized in Vancouver, by an amalgamation of Northern Construction Co. Ltd. and Palmer Bros., Grant Smith & McDonnell, and Armstrong, Morrison & Co. Ltd. The directors are A. R. Mann, President and Managing Director; W. H. Armstrong, First Vice President; P. N. Carlson, Second Vice President; C. V. Cummings, Secretary-Treasurer; Alex. Morrison, Grant Smith, E. V. Hauser, W. C. Ditmars, and A. B. Palmer. It has secured, as a site for its plant, the old Royal City Mills property, belonging to the British Columbia Electric Ry. on False Creek, Vancouver, with 70 ft. frontage and 100 ft. depth. The site is being prepared, about 2,000 piles having to be driven. The company has a contract from the Imperial Munitions Board for six wooden ships. Ways are being built to lay down four vessels at once. It is expected the first keel will be laid by July 20 and that between 400 and 500 men will be employed.

Shipbuilding Bounties.—Thos. Cantley, Chairman of the Board, Nova Scotia Steel & Coal Co., New Glasgow, N.S., in speaking at the Canadian Manufacturers Association at Winnipeg, June 12, in regard to shipbuilding, said that conditions in the shipping trade at present presented an unrivalled opportunity for Canada to jump to the front as a shipbuilding country. A Dominion Government bounty would stimulate the shipbuilding industry, and he considered that some such encouragement was necessary in order to bring about a shipbuilding revival.

The Pacific Shipbuilding Co., Ltd., which has, as stated in our last issue, been incorporated under the Dominion Companies Act, with authorized capital of $50,000, has its office at 310 Winch Building, Vancouver, the persons principally interested being J. C. Shields, lumberman, and J. T. Robinson, broker, of Kamloops, B. C. It was stated to be the company's intention to establish a shipbuilding yard at New Westminster, but nothing, as far as can be learned, has yet been done in that connection, and the company does not yet appear to have any contracts for vessel building.

Replacing the Quadra.—When the Marine Department estimates were under consideration in the House of Commons, June 1, on the item $150,000 for the construction of two steamships to replace the C.G.S. Quadra in British Columbia waters, the Minister of Marine said:—"They will be built in Canada, and of wood. The Quadra was lost in collision, and we find that we can do much better by building two smaller vessels than one large one. We have managed to get along in the meantime by chartering a vessel, and in view of existing conditions, it is not likely we shall proceed with the construction of those vessels this year. That is a matter for consideration."

The Imperial Oil Co.'s oil tank steamship Reginolite, the fourth to be built for it by Collingwood Shipbuilding Co., was launched at Collingwood, Ont., June 21, without any ceremony. The vessel, which is intended entirely for ocean service, has the following dimensions: Length, 250 ft. between perpendiculars, 259 ft. over all; beam, 45¾ ft.; depth, 25 ft. to upper deck; deadweight carrying capacity, 3,500 tons. The machinery will consist of a set of triple expansion engines, with cylinders 18, 30, and 50 in. x 36 in. stroke. Steam will be supplied by two Scotch boilers 13½ x 11 ft. long, working at 180 lb. pressure. The vessel will take the highest class in Lloyd's Registry for ocean service. Her construction has been under the supervision of R. W. Henderson, Marine Superintendent, Imperial Oil Co. A fifth vessel, to be called Talarolite, is still on the stocks at Collingwood.

Polson Iron Works, Ltd., Toronto, in addition to the 6 steel vessels for the Naval Service Department, which are described on another page, are building ten 3,500-ton deadweight freight steamships, all of the same type, to British Corporation specifications, highest class for ocean service, the last of them to be finished before the close of navigation in 1918. The plates and other material has all been purchased and are being delivered. The principal dimensions are: Length over all, 261 ft.; breadth moulded, 43½ ft.; depth moulded, 22 ft. 11½ in. The propelling machinery will consist of triple expansion surface condensing engines, cylinders 20½-33-54 in. x 36 in. stroke, developing 1,250 h.p. Each vessel will have two Scotch marine type boilers, each 14 ft. diameter x 12 ft. long, equipped with forced draught, and designed for 180 lb. working pressure. The vessels will be equipped throughout for ocean service, with electric plants and searchlight, cargo winches, steam windlasses, steam and hand steering gears, and 15-ton evaporator outfits.

Polson Iron Works, Ltd., Toronto, is making the following extensions and alterations to plant: New boiler shop, 250 x 90 ft.; construction of steel, concrete and glass; to be equipped with the most modern electric cranes and up to date machinery. The foundations for this building are being prepared. The present boiler shop will be overhauled and refitted for an extension to the machine shop and engineering departments, to permit that department to expand. A new gantry crane, 65 ft. wide x 50 ft. high, of 10 tons capacity, is being erected on the east side of the dock, which will make it possible to lay down four 3,500 D. 5 vessels at the same time. New buildings have been erected as storehouses, one on the west dock for lumber being stacked for seasoning purposes, and another to accommodate the auxiliaries and parts purchased outside. This building, having already proved too small for certain of the auxiliary machinery, has been placed on the west dock. The company is running continuously, day and night, double shifts, employing at present about 1,000 hands. It has been very fortunate in securing material, having placed orders for in the neighborhood of 10,000 tons of steel.

Terms for Wooden Shipbuilding.—The following letter from W. I. Gear, Director of Steel Shipbuilding, to a member of the House of Commons was read in the house recently: "The Imperial Board has been authorized by the British Ministry of Shipping to arrange for the construction of a certain number of wooden ships in Canada according to a standard type. The design and specifications can be seen at the board's office. The vessels are of approximately 2,500 tons deadweight, being 250 ft. long, 40 ft. beam and 21 ft. draught. The terms on which the board is placing these contracts are the reimbursement of the contractor for the actual cost of building, including labor, material and overhead, plus a fixed sum by way of profit for each vessel constructed. Under these circumstances, and because definite results must be secured, the board will examine closely into the capacity, resources and experience of each firm seeking a contract. With regard to the plant, etc., employed in the construction, individual arrangements will be made in each case on the basis of allowing a reasonable amortization as part of the cost of construction, or in the case of an existing plant allowing a reasonable rental for

the use of the plant as part of the cost. With regard to any construction undertaken in Eastern Canada, the essential point will be for the contractor to satisfy the board that he has or can obtain on reasonable terms a sufficient quantity of suitable lumber to build the type of ship required. It is not safe to reckon on obtaining lumber from British Columbia; first, because we expect that most of the lumber suitable for the purpose, which is cut there, will be taken up in wooden ship construction on the Pacific coast, and second, because it is doubtful whether any large quantity of lumber could be brought across the continent in the present railway situation even if it were available."

SHIPBUILDING NOTES.

The Cotton Co., Ltd., contractors, Vancouver, B.C., is reported as going to establish a shipbuilding plant at False Creek, Vancouver, to build 10 vessels for eastern shipping concerns.

Halifax Shipbuilding Co., Ltd., has been incorporated under the Dominion Companies Act, with $3,000,000 authorized capital and office at Halifax, N.S. The provisional directors include J. B. Kenny, barrister, and several law students.

The Ernst Shipbuilding Co., Ltd., has been incorporated under the Nova Scotia Companies Act, with $25,000 authorized capital, to take over and operate the shipbuilding plant hitherto carried on at Mahone Bay, N.S., by J. Ernst & Sons.

The Westminster Marine Railway Co., New Westminster, B.C., is reported to have acquired a lease of Poplar Island, in the Fraser River, from the Dominion Government, on condition that it be used for a shipbuilding and repair plant.

A. Sydney, N.S., press dispatch says the Dominion Bridge Co., Montreal, and the Beardmore interests acting together, propose to establish a steel shipbuilding plant in Nova Scotia and that the matter is being considered by the Nova Scotia Shipbuilding Commission.

The Sydney Foundry & Machine Works, Ltd., as mentioned in our last issue, has purchased a small floating drydock, for use in connection with its plant at Sydney, N.S., where it does a large ship repair business. It is the intention to commence a shipbuilding business there, and to build a larger drydock.

The Newfoundland Shipbuilding Co., of which the principal is stated to be Christoffer Hannevig, of Christiania, Norway, is reported to have settled on a site for its proposed plant, at Harbor Grace, Nfld. C. Hannevig is President of Christoffer Hannevig, Inc., general shipping agents and vessel brokers, New York.

The Falmouth Shipbuilding & Transportation Co., Ltd., the incorporation of which was announced in our last issue, has an authorized capital of $45,000, and its head office at Windsor, N.S. The officers are: E. E. Armstrong, President; A. P. Clark, Secretary-Treasurer; F. W. Dimock, J. L. Sexton, T. B. Atkins and T. A. Mosher, directors. One wooden vessel is under construction at Falmouth, and will be sold on completion.

Shipbuilders Corporation, Ltd., the incorporation of which, with a capital of $250,000 and office at Toronto, was mentioned in our last issue, was to have been formed for the purpose of engaging in shipbuilding at some point on the Pacific coast, but we are advised that under existing circumstances the promoters, who are associated with the Canadian Northern Ry., have postponed the organization of the company indefinitely.

The Tusket Shipbuilding Co., Ltd., mention of which was made in our last issue, was incorporated under the Nova Scotia Companies Act in April, with $75,000 capital, and office at Tusket, to build wooden vessels. The capital, which is all common stock, is issued in shares of $1 each. The officers are: L. N. Fuller, President; G. W. Eden, Treasurer, and H. C. W. Power, director. Contracts are reported to have been accepted for the supply of a quantity of lumber, and also for the erection of a sawmill for the handling of it at Tusket.

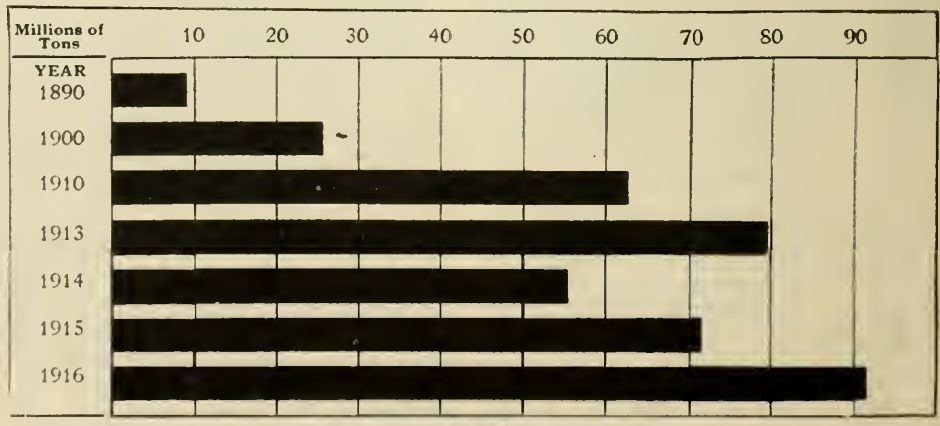
The Goderich Drydock & Shipbuilding Co., Ltd., the incorporation of which was mentioned in our last issue, is reported to have arranged for a site for the construction of docks, etc., and it is stated that the government has made a concession and undertaken to assist in or facilitate the construction of docks, etc., it being the company's immediate object to build vessels. With regard to this latter statement, it may be remembered that those responsible for the placing of shipbuilding contracts on behalf of the Imperial Munitions Board have already stated that it is not the intention to subsidize or assist in the establishment of shipbuilding plants. Where a shipbuilding plant has been organized, and those in charge of same can assure the board of their ability to carry out contracts, orders will be given. In so far as government aid in the construction of a drydock is concerned, there is an act granting aid for construction of approved drydocks by guarantees of interest for a term of years on certain expenditure. As the company had not been organized at the time of writing, the government could not have undertaken to assist in or facilitate the construction of docks, etc.

Suggested Suspension of Coasting Laws.—The U.S. Government was reported, June 4, to be considering the suspension of the coasting laws, forbidding foreign vessels to engage in the U.S. coasting trade, thus permitting an interchange of vessel traffic between Canadian and U.S. vessels on the Great Lakes and along the coasts. This, it is stated, would remove the congestion at Atlantic and Gulf ports, as well as on the Great Lakes, at U.S. and other points, and would release a number of U.S. coasting vessels for ocean service. It is stated that the British and Canadian governments will consent to the arrangement if it is proposed by the U.S.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during May.

ARTICLES			CANADIAN CANAL	U. S. CANAL	TOTAL
Flour	Eastbound	Barrels	327,870	548,290	876,160
Wheat	..	Bushels	14,562,735	26,393,324	40,956,059
Grain	..	Bushels	4,763,614	12,794,965	17,558,579
Copper	..	Short tons	2,427	9,783	12,210
Iron ore	..	Short tons	1,430,213	4,006,254	5,436,467
Pig iron	..	..	..	..	..
Lumber	..	M. ft. b.m.	..	23,524	23,524
Stone	..	Short tons	..	..	..
General merchandise	..	Short tons	5,671	6,393	12,064
Passengers	..	Number	274	..	274
Flour	Westbound	Barrels	..	..	..
Grain	..	Bushels	..	..	..
Coal, hard	..	Short tons	20,710	223,810	244,510
Coal, soft	..	..	156,450	1,047,667	1,204,117
Iron ore	..	Short tons	2,000	13,883	15,883
Manufactured iron	..	Short tons	921	14,126	15,047
Salt	..	Barrels	54,600	58,679	113,259
Oil	..	Short tons	..	..	..
Stone	..	Short tons	..	..	..
General merchandise	..	Short tons	32,809	130,090	162,899
Passengers	..	Number	227	19	246
SUMMARY					
Vessel passages		Number	649	1,626	2,378
Registered tonnage		Net	1,794,197	5,220,932	6,925,119
Freight—Eastbound		Short tons	1,996,493	5,152,336	7,148,834
—Westbound		..	220,680	1,438,378	1,659,058
Total freight		..	2,217,178	6,590,714	8,807,892



Sault Ste. Marie Canals freight traffic.

Atlantic and Pacific Ocean Marine.

The Allan Line s.s. Carthaginian struck a floating mine and sank, about June 18, soon after leaving Glasgow, Scotland, for Montreal.

The s.s. Waitotara, owned by Union Steamship Co. of New Zealand, and which sailed from Vancouver, May 19, for Australasia, is reported to have been destroyed by fire, together with her cargo.

The Union Steamship Co. of New Zealand, which operates the mail line between Canada and Australasia, is reported to have amalgamated with the Peninsular & Oriental Steam Navigation Co.

Canadian Pacific Ocean Services, Ltd., is reported to have chartered the s.s. Key West, 8,800 tons. It is reported that the company will operate her across the Pacific, in which service it has a number of other steamships on charter, including Strinda, Arabien, Kenku Maru and Unkai Maru.

The Dominion Government is reported to have purchased the dredge Kennaquhair from Canadian Dredging Co., Midland, for service in James Bay. It is stated that it is leaving Port Arthur immediately, and will take about a month on the journey. The dredge was built at Welland in 1908, with a registered tonnage of 452. Its dimensions are: length, 100 ft.; breadth, 40 ft.; depth, 9.5 ft.

Maritime Provinces and Newfoundland.

The pilot commissioners of the pilotage district of Shepody Basin, N.B., have increased the inward pilotage rate on vessels from 1½c to 2½c a registered ton, and the outward pilotage rate from 2c to 2½c a registered ton.

A portion of pier 5 at West St. John, N.B., about 150 ft. long, carrying a warehouse and a portion of the grain conveyor system, collapsed, June 13, and a large number of heavy cases of merchandise for export were reported lost.

The British s.s. Njord, with a cargo of coal from Sydney, N.S., for St. John's, Nfld., was abandoned in a burning condition, about 40 miles east by north of Newfoundland, early in June. The crew were taken off by the British schooner E. B. Walters, and landed at St. Pierre, Miquelon.

The s.s. Premier, while leaving Sambro, N.S., June 4, during foggy weather, ran ashore on Pollock Ledges. The crew were saved and assistance was sent to the vessel, which was hard aground. The Premier was formerly owned in Sault Ste. Marie, Ont., and was sold to Nova Scotia parties about two years ago.

The Canada Atlantic & Plant Line Steamship Co.'s certificate of registration has been revoked by the Nova Scotia Registrar of Joint Stock Companies, it having made default in payment of its annual registration fees. The reason for the company's cessation of Canadian business was given in our last issue.

At a meeting of the Nova Scotia Steel & Coal Co.'s directors, at New Glasgow, N.S., June 5, Thos. Cantley, President, stated that the first steel steamship to be built by the company would be launched early in July. She could have been launched early in June, but it was the intention to keep her on the ways until she was ready for sea. The second steamship, which is about 25% larger than the first, is wel ladvanced. After the first has been launched, the keel of a third will be laid.

A. & R. Loggie, Loggieville, N.S., are reported to have purchased the s.s. Orontes from Wallace Fisheries, Ltd., Vancouver, B.C. The vessel was built at Beverley, Eng., in 1895, and is screw driven by engine of 60 n.h.p. Her dimensions are: length, 111.5 ft.; breadth, 21 ft.; depth, 11.5 ft.; tonnage, 178 gross, 76 register. The vessel will be taken to Nova Scotia from Vancouver by way of the Panama Canal, in charge of Capt. Reynolds and a crew of 8. It is stated to be the intention of the new owners to secure a complete trawling outfit from Denmark and equip the vessel as a beam trawler.

Province of Quebec Marine.

Canada Steamship Co.'s repair plant, machine shop, upholstering shop and stores, together with three small vessels in course of construction, were destroyed by a fire which threatened the whole town of Sorel, June 10. The company's loss is estimated at $150,000, which is covered by insurance.

Respecting the steamship service between Gaspe Bay, Dalhousie and Campbellton, for which a government subsidy is paid, the Minister of Trade and Commerce stated in the House of Commons, June 4, that all steamship contracts made by the department stipulate certain ports of call, and that such calls are insisted on when it is possible to make them. In many cases calls are not possible in rough weather. No complaint had been made so far this year as to the service, which is performed by the Gaspe & Baie des Chaleurs Steamship Co.

Ontario and the Great Lakes.

The name of the s.s. Roi Tan, owned by the Canadian Towing & Wrecking Co., Port Arthur, has been changed to Siskiwit.

The Rideau Steamboat Co., Ottawa, has appointed G. Depencier, captain, and B. W. Campsall, chief engineer, of its s.s. Wanakewan, for the current season.

The Public Works Department is receiving tenders for the reconstruction of part of the cribwork of the wharves at the entrance to the Kingston drydock.

The Pelee & Lake Erie Navigation Co., Ltd., has applied to the Lieutenant Governor in Council for the acceptance of the surrender of its charter, as from July 3.

The Upper Ottawa Improvement Co.'s s.s. G. B. Greene, which has been practically rebuilt at Quyon, Que., during the winter, was launched there, June 8, and was expected to be ready for service by the end of the month.

The Hamilton Shipbuilding & Ferry Co. is operating the steamboats Aletha and Brockville, P. Walsh being captain, and M. Dorey, chief engineer of the former, and G. Kirk, captain, and J. Kirk, chief engineer, of the latter.

The White Star Line, Detroit, Mich., operating on the Great Lakes, is stated to have decided to eliminate all Canadian calls during this year, owing to the Dominion Government decision that all vessels carrying freight shall instal a water sprinkler system as a fire protection.

Canada Steamship Lines' s.s. W. Grant Morden arrived at Port Colborne recently with the largest single grain cargo ever brought down the lakes. It consisted of 750,000 bush. of oats, valued at over $600,000. The cargo was discharged in 15 hours, which is stated to be a record in handling grain.

The vessel demand on the Great Lakes was reported to be light during June. Tonnage offered at 6c a bush. for wheat was not placed, some of it being utilized for contract ore. A charter cargo of wheat from Fort William to Buffalo was booked at 3¾c, and grain men are not bidding ahead. Lumber rates from the head of the lakes to Tonawanda, N.Y., were around $5.

Canada Steamship Lines, Ltd., has offered to provide accommodation on its vessels on the Niagara Division for parties of returned soldiers, twice a week, for trips across the lake, and thinks that trips to Queenston Heights and Niagara Falls might also be arranged. W. E. Burke, Assistant Manager of the company, has placed his services at the disposal of the Overseas Club for this purpose.

Canada Steamship Lines, Ltd., is being sued by J. E. Carter, a vessel broker, for $50,000 damages for breach of contract. He claims that he and D. Hanehy entered into an agreement with the company under which they were to receive $25,000 commission on the sale of each of certain steamships, and that the steamships Glenellah, Rosedale, Strathcona and Trinidad were sold through their efforts, and that the company refused to pay the commission.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for May, as follows: Superior, 602.38; Michigan and Huron, 581.14; St. Clair, 576.07; Erie, 572.93; Ontario, 246.51. Compared with the average May levels for the past 10 years, Superior was 0.47 ft. higher; Michigan and Huron. 0.65 ft. higher; Erie, 0.15 ft. higher, and Ontario, 0.36 ft. lower.

Some minor rioting occurred at Port McNicoll, June 15, when about 150 alien employes engaged in loading and unloading vessels at that C.P.R. lake terminal struck work for increased pay. The company employs about 700 dock workers there, of whom about 150 are Austrians and Bulgarians. These attempted to intimidate the other workers to join in the strike, but without success.

The s.s. Forest City, owned by the Silver Islet Navigation Co., Port Arthur, is reported to have been sold to the Great Lakes Transportation Co., Midland, for service on the Georgian Bay route. She was built at Wilmington, Del., in 1891, and was formerly named King Edward. She has a steel hull divided by 5 watertight bulkheads, and is equipped with a beam condensing engine, with cylinder 38 x 108 in., 400 i.h.p. at 25 r.p.m., and supplied with steam by 2 Scotch boilers, 11 x 9 ft., at 25 lb. Her dimensions are: length, 175 ft.; breadth, 31 ft.; depth 9½ ft.; tonnage, 571 gross, 449 register.

The Mathews Steamship Co.'s s.s. Steelton was seized under an order of the Superior Court, at Montreal, recently, at the instance of an employe, as security for an action for damages under the Workmen's Compensation Act. The vessel was released on the company giving security for $5,000, as fixed by the court. The employe alleges that he was instructed to jump from the deck of the vessel to the St. Gabriel pier, about 15 ft., whereby he was badly injured, and he claims that the company is responsible for the act of its officer in giving such

order and for not providing a means of descent.

The Collingwood Steamship Co. has been organized, with head office at Collingwood, and incorporation is being sought. The following provisional officers have been elected: Capt. G. C. Coles, President; M. P. Byrnes, Vice President; H. Storey, Secretary; J. F. Zimmerman, Treasurer, and Capt. F. G. Moles, Manager. The s.s. City of Meaford has been secured, and has been placed in service between Collingwood and Sault Ste. Marie. She was owned by Perks Bros., Meaford, and was built there in 1906 and originally named Seaman. Her hull is of oak, and she is of the following dimensions: length, 111 ft.; breadth, 24 ft.; depth, 8 ft. 5 in.; tonnage, 328 gross, 223 register.

The U.S. Engineer Office. Detroit, Mich., has given notice that, owing to the obstruction caused by the wrecks of the steamships Saxona and Pentecost Mitchell in the channel to the westward of Pipe Island, in the St. Marys River, the use of the channel has been discontinued temporarily. All vessels have been instructed to take a course starting northeast of the Frying Pan Island light, and running to abreast of the Pipe Island twins, and thence to the old intersection of the two courses southwest of Lime Island. To mark the new channel, the Watson reefs gas buoy 5 has been removed to Pipe Island choal, and gas buoys have been established at the edge of the shoal northeasterly of the Pipe Island twins ,and at the southerly edge of the shoal off Squaw Island.

The A. B. Mackay Steamship Co.'s s.s. Natironco and the Detroit & Cleveland Navigation Co.'s s.s. Eastern States collided in the lower Detroit River, near Grassy Island, June 19, both vessels being considerably damaged. The former was beached on the Canadian side of the river, and the latter returned to Detroit with her stem broken and her bow twisted. It is alleged that the Natironco was improperly lighted, and that her lights did not show clearly. The Natironco was built at Detroit, Mich., in 1892, and named Pioneer. She was acquired by the National Iron Co., Toronto, and the National Steamship Co. was formed to own and operate her in the company's interests. She was later taken over by the Merchants Mutual Line, Ltd., a subsidiary of Canada Steamship Lines, Ltd., and early this year was purchased by the A. B. Mackay Steamship Co., Ltd., Hamilton.

Manitoba, Saskatchewan and Alberta.

John Walter, Ltd., is this year operating the s.s. City of Edmonton from Edmonton to Shandro, about 125 miles below Edmonton, on the North Saskatchewan River, calling at intermediate points. The first trip was made May 31. During last autumn some clearing of the channel was done by the Dominion Government, and it is anticipated that further work will be done, including the erection of landing stages at certain points.

The Winnipeg and St. Boniface Harbor Commissioners have given notice that all vessels, power boats, or launches, etc., sailing in Winnipeg and St. Boniface harbor, on the Red River or Assiniboine River, within the limits of the two cities, are required to register with the harbor master, when permits will be issued and number plates placed on each vessel so registered. The registration fee is $2, and a penalty of $50 or imprisonment for 30 days is provided for owners operating vessels without having them registered.

Pas, Man., has been a busy shipbuilding point during the past spring. The North Canada Fish Co. has had built barges nos. 1 and 2, a 40 ft. gasoline tow boat, and another tow boat. These will be employed in carrying fresh fish from the numerable lakes surrounding Pas, all of which are easily accessible by water from that point. The fishing season opened June 15, when the boats were put in service.

The development of the navigation interests in the Pas district has been rapid, and although there is at present over $150,000 invested in various boats, barges, etc., engaged in commercial work, there are no facilities whatever for the docking of the boats or the handling of the freight moved. The need of them is very apparent, and it is hoped that notwithstanding the war it may be possible to get the Dominion Government to do something.

The Ross Navigation Co. successfully launched its barge no. 7 on May 12, and succeeded in floating down the Saskatchewan River its barge no. 8, which was bought from the City of Prince Albert. The barge was manned by a crew of six men and equipped with long sweeps for guiding it through the crooked channels. The trip, which was made in 10 days, covered a distance of nearly 325 miles. These two barges, which will carry 75 and 100 tons respectively, will be used in transporting copper ore from the head of navigation at Sturgeon River to Pas, for reshipment to the Trail smelter at Trail, B.C. The Ross Navigation Co. has also built the s.s. Nipawin, 85 ft. long, 20 ft. beam, and 4½ ft. draught. She is equipped with dry back Scotch boiler and stern wheel engines.

British Columbia and Pacific Coast.

A meeting of shareholders of Melmore Steamship Co., Ltd., is to be held at Victoria, July 6, to receive the liquidators' winding up report.

The C.P.R. s.s. Princess Maquinna, on the Vancouver Island West Coast route, struck a submerged rock off the entrance to Kyuquot Sound, June 16, and sustained some damage to her hull. She completed her trip and returned to Victoria, June 19, when she was examined and repaired.

The Malahat Motor Ship Co.'s auxiliary powered schooner Esquimalt was expected to be launched from the Cameron-Genoa Shipbuilders' yards during June. It is expected that she will be completed and ready for service by the end of July or early in August, when she will proceed to Vancouver to load about 1,500,000 ft. of lumber for Australia.

The C.P.R. s.s. Princess Victoria was replaced in service early in June after an extensive overhaul. She displaced the s.s. Princess Charlotte on the triangular route, the latter taking the run to Seattle. The s.s. Princess Alice had a general overhaul preparatory to being placed on the Alaska run, June 8, and the s.s. Princess Charlotte will be placed on the same route about July 10.

A delegation of member of the Vancouver Board of Trade waited on the Dominion Government at Ottawa recently and conveyed the board's request that Vancouver should be made a national free port. Members of the government are reported to have promised that Vancouver would be dealt with in exactly the same way as Montreal had been, with a harbor commission which may secure money from the government for improvements at a low rate of interest. It was stated that a dry dock is to be built by private enterprise, with a government subsidy as an aid.

Capt. Coughlin, of the steam tug Cleeve, has entered action in the Admiralty Court at Vancouver, against the Grand Trunk Pacific Coast Steamship Co., claiming $1,100 damages sustained in Dec., 1916, when his vessel was in a collision with the s.s. Prince Rupert in the Burrard Inlet. The casualty came before the Wreck Commissioner's court in December, and the blame for the casualty was fixed on Capt. Coughlin. He appealed against the decision, with which one of the nautical assessors disagreed, and a rehearing was ordered. In the second hearing it was decided that as the Prince Rupert was the overtaking vessel, she was to blame.

Mainly About Marine People.

William Dott, of the Allan Line Steamship Co., Liverpool, died there, June 2.

T. R. Job, of Job Bros., shipowners and merchants, Liverpool, Eng., and St. John's, Nfld., died recently, aged 81. He commenced business in 1866.

Capt. J. A. Tymon, formerly well known as a master of vessels navigating inland waters, and latterly captain of one of the Toronto Ferry Co.'s vessels, died at Toronto, June 5, aged 50.

Capt. D. M. Estes, a veteran mariner of the St. Lawrence River, chiefly in the Thousand Islands district, died at Brockville, Ont., June 20.

H. R. Storey, purser, s.s. Hamonic, Northern Navigation Co., has resigned on his appointment as Secretary, Collingwood Steamship Co., and purser of its s.s. City of Meaford.

Major H. Maitland Kersey, D.S.O., J. A. Martin and Capt. J. V. Forster, of Canadian Pacific Ocean Services, Ltd., were presented to the King recently, on the latter's visit to the s.s. Metagama, while in Liverpool, Eng.

A. C. Sheridan, General Agent, Canada Steamship Lines, Ltd., Buffalo, N.Y., who died there recently, had been with the company and its predecessor for about six years. He was the first agent of the Richelieu & Ontario Navigation Co., when it opened its Buffalo office, and was appointed District Passenger Agent there for Canada Steamship Lines in 1916, and just prior to his death had been appointed General Agent in charge of freight and passenger business.

The **International Mercantile Marine Co.**'s annual meeting was held at Hoboken, N.J., June 4. The official estimate for 1916, as furnished by the President, showed gross earnings for 1916 of $26,299,595, compared with $13,581,660 earned in 1915, and a deficit of $302,528 in 1914. The President announced that in view of the disturbed shipping situation, it had been decided not to take up the liquidation of accrued dividends on the preferred stock, amounting to about 88%. The exact earnings cannot yet be stated, owing to the delay in getting in the returns from British subsidiaries, but the full report was expected to be issued during June. A dividend of 3% on the preferred stock was paid April 14.

Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co. has opened offices at Perthuis, Que.; Camp Mohawk, Ont.; East Selkirk, Grand Beach, Scanterbury and Victoria, Man., and has closed its offices at Jonquieres, Que., and Galilee, Sask.

The C.P.R. is erecting an additional copper wire between Montreal and Halifax. The erecting crew were at Amherst, N.S., June 6, and it was anticipated that they would reach Halifax by the end of the month. The distance between Montreal and Halifax is 757 miles, and the cost of the copper wire alone is stated to be about $75,000, or approximately 100% higher than before the war.

Under the Ocean Telegraph Act of 1913 the Dominion Government made an agreement with the Universal Radio Syndicate, Ltd., by which the latter was to establish a radio station in Canada and one in Great Britain for the transmission of messages at certain rates, and the government agreed to issue the necessary license for such purpose. The syndicate deposited £10,000, £5,000 of which was to be returned when it had expended $50,000, half of which was to have been expended in Canada. The balance was to be repaid to the syndicate on the completion of the proper equipment, and the satisfactory operation of the two stations named. The required expenditure was made, and the $25,000 was returned, but owing to the outbreak of war, the syndicate was unable to float a company to operate the stations and to acquire the necessary apparatus. The syndicate, being in urgent need of money, and the government, having regard to the value of a second trans-Atlantic radio telegraph service, and after consultation with the British Post Office authorities, loaned the syndicate $15,000, to bear interest at 5%, and to be repaid May 1, 1915. An official test of the service was made Jan. 27, 1915, and it was established that the operating speed and general performance of the stations was not up to the standard called for by the agreement, and payment of the balance of deposit was accordingly withheld. The syndicate is now quite unable to carry out its agreement, and the government has refused to exercise its powers to purchase the station, although some use is being made of the station in Canada. A bill has been passed repealing the act under which the agreement was made and permitting the government to repay to the syndicate, which is now in a receiver's hands, the balance remaining unpaid of the deposit, after deducting the amount due to the government. The Canadian Marconi Co. has made arrangements with the receiver to take over the Canadian station, and to equip it and make it first class in every way. The Minister of Marine, in dealing with the matter in the House of Commons, June 7, stated that the Canadian Marconi Co. will expend at least $100,000 on improvements to the station at Newcastle, N.B., and another large sum on the station at Ballybunion, on the northwest coast of Ireland, and it is expected that in a short time an additional efficient service will be in effect.

The C.P.R.'s Winnipeg Terminal Division has 304.39 miles of track, of which 193.11 miles are in the train and delivery yards, which have capacity for 15,959 cars.

Among the Express Companies.

The Central Canada Ex. Co. has opened an office in the building formerly occupied by the Quebec Bank, on Jasper St. East, Edmonton, Alta.

N. J. Ross, Superintendent, Canadian Ex. Co., Montreal, having resigned, A. J. Seaton has been appointed Assistant Superintendent in charge of the Eastern Division, with office at Montreal.

The Board of Railway Commissioners issued general order 194, June 6, authorizing express companies to amend the Express Classification for Canada, to increase the weight upon which express charges for carriage of horses are based, from 10,000 to 12,000 lb. a carload.

The Board of Railway Commissioners passed order 26196, June 6, extending the area within which tolls of express companies include collection and delivery of express freight in Montreal, as defined in order 18281, Dec. 9, 1912, at Tail Race, or Butler Ave., to include British Munitions Co.'s plant, for the period of the war only, without prejudice to the rights of parties concerned, unless a general extension of the Montreal collection and delivery limits be made in the meantime.

V. G. R. Vickers, Superintendent, Atlantic Division, and Manager, Foreign Department, Dominion Ex. Co., Montreal, retired from the company's service at the end of June, and has joined the Holden Co., Ltd., railway supplies, etc., Montreal, as Vice President. He was born at Toronto, Jan. 1, 1866, and entered the Vickers Ex. Co.'s service as clerk in May, 1884, and was subsequently money clerk and cashier, until the company withdrew from business, Jan. 1, 1889. He entered Dominion Ex. Co.'s service in Apr., 1889, and was, to June, 1889, city freight solicitor; June, 1889, to May, 1891, agent, St. John, N.B., becoming joint agent when the New England Despatch Ex. Co. was taken in; May to Nov., 1901, agent, Montreal; Nov., 1901, to Dec. 31, 1904, General Agent, Montreal; Jan., 1905, to June 30, 1917, Superintendent, Atlantic Division, and subsequently also Manager, Foreign Department, Montreal. He is a son of the late J. J. Vickers, who founded the Vickers Ex. Co., the first express company in what was then Upper Canada, and which was absorbed by the Canadian and Dominion Ex. Cos. in Jan., 1889.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Flannery Bolt Co., Pittsburg, Pa., has issued a patriotic souvenir, 10 x 14 in., in colors, containing a portrait of President Wilson, the United States flag, and a view of the Capitol building at Washington, with an appropriate verse underneath.

American Locomotive Co.—J. B. Ennis, who has been appointed Vice President in charge of engineering, has been in the company's service since its incorporation in 1901, prior to which he was with the Rogers & Schenectady Locomotive Works. He has been Chief Mechanical Engineer since December, 1912.

Canadian Ingersoll-Rand Co., Montreal, has issued bulletin K. 302, 16 pgs., 6 x 9 in., illustrating its line of steam driven, straight line, single stage air compressors, which are designed for those requiring compact self contained units of small and medium size for service in shop, foundry, mill or electrical plant, etc. Automatic splash lubrication, dust-proof construction, Circo silent leaf valves and quick convertibility to belt drive are claimed as the leading features of the design referred to.

Berry Brothers, Inc.—Thos. Berry, who died at Detroit, Mich., recently, aged 89, was one of the founders of Berry Brothers, Inc., varnish manufacturers, who have a Canadian factory at Windsor, Ont. He was born in Sussex, Eng., Feb. 7, 1829, and went to Detroit in 1856, with two brothers, and established the Berry Brothers firm in 1858. He took special interest in the manufacturing department, and devised many of its products, particularly the combination of gum and solvents, now called Luxberry wood finish.

The G.T.R. has changed the name of its station Fields, on the Collingwood-Meaford line, to Camperdown, to avoid confusion with Field, B.C., on the C.P.R.

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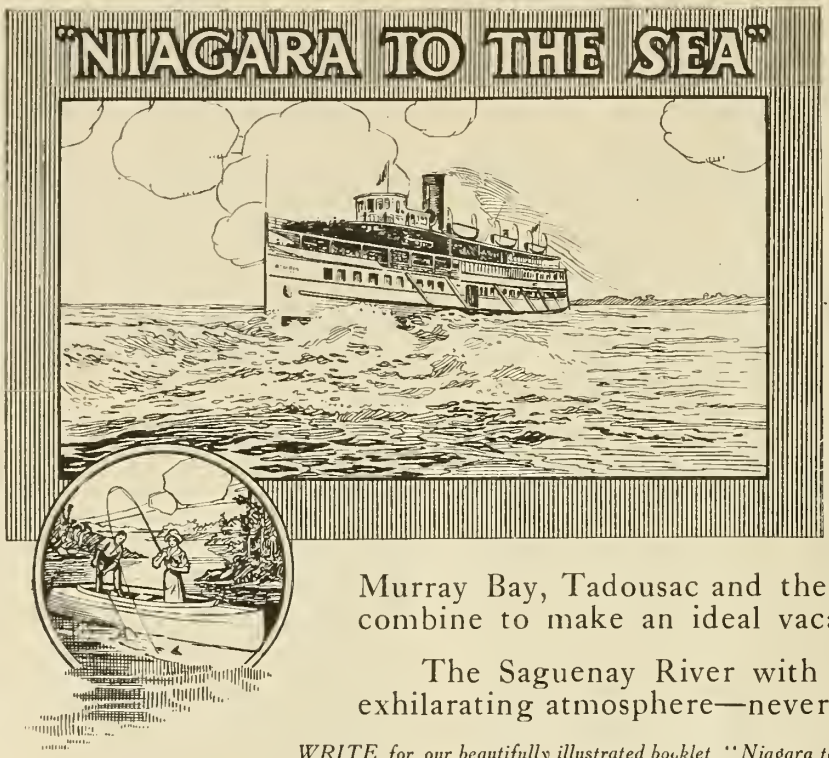

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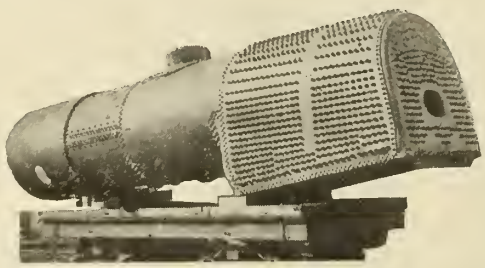

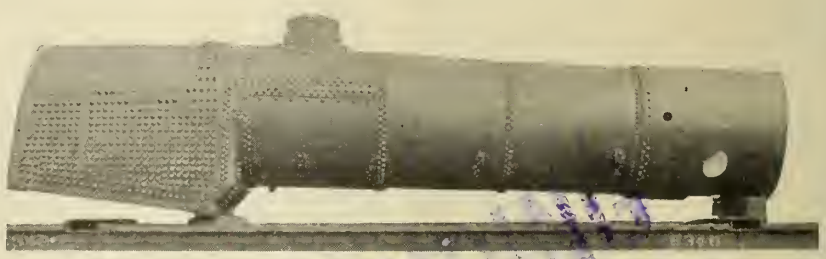

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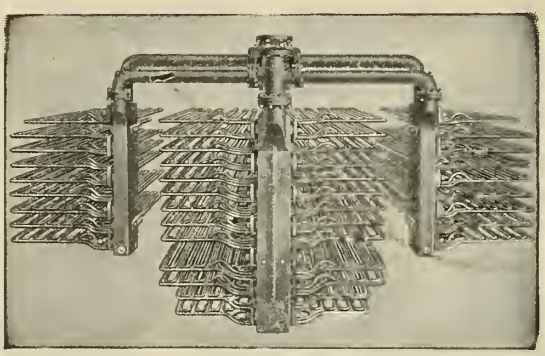

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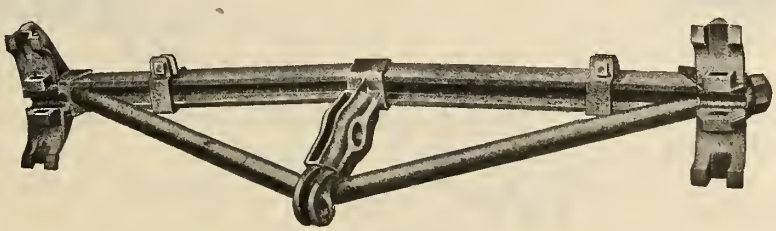

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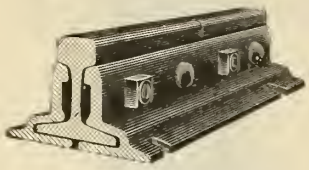
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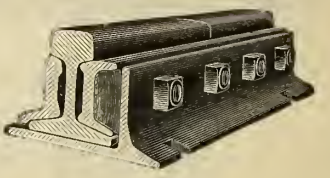
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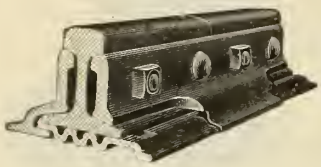
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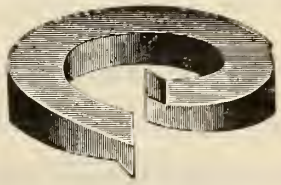

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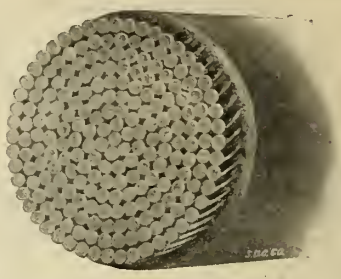

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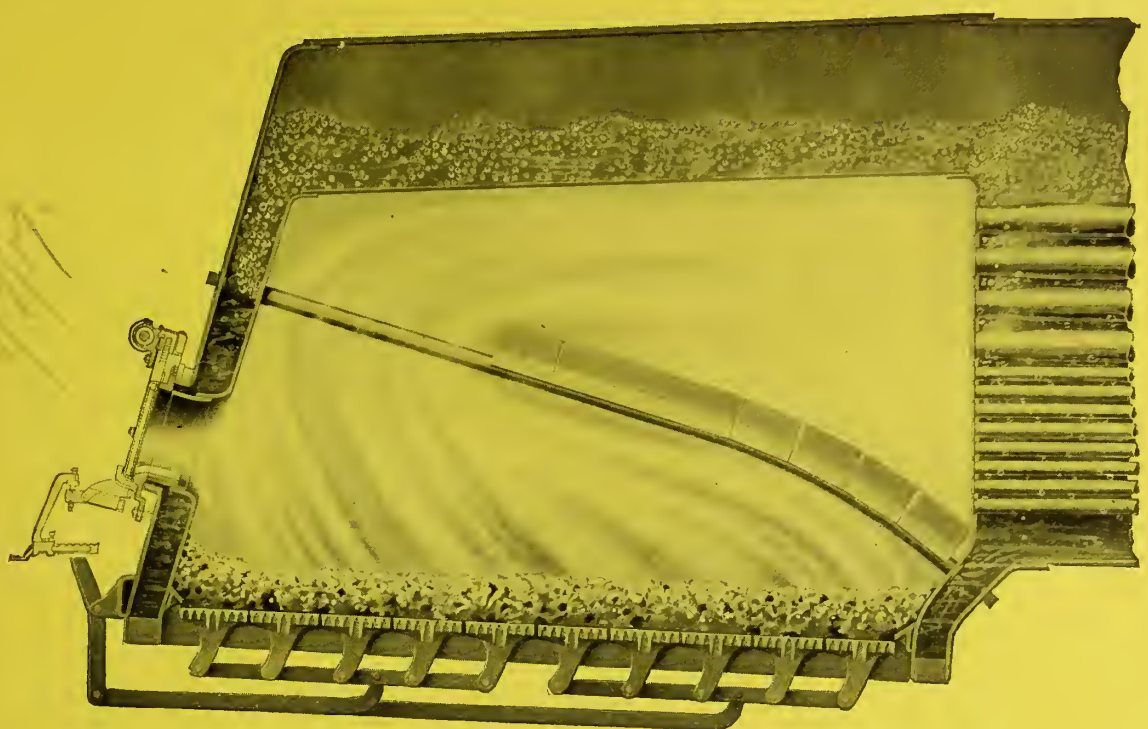

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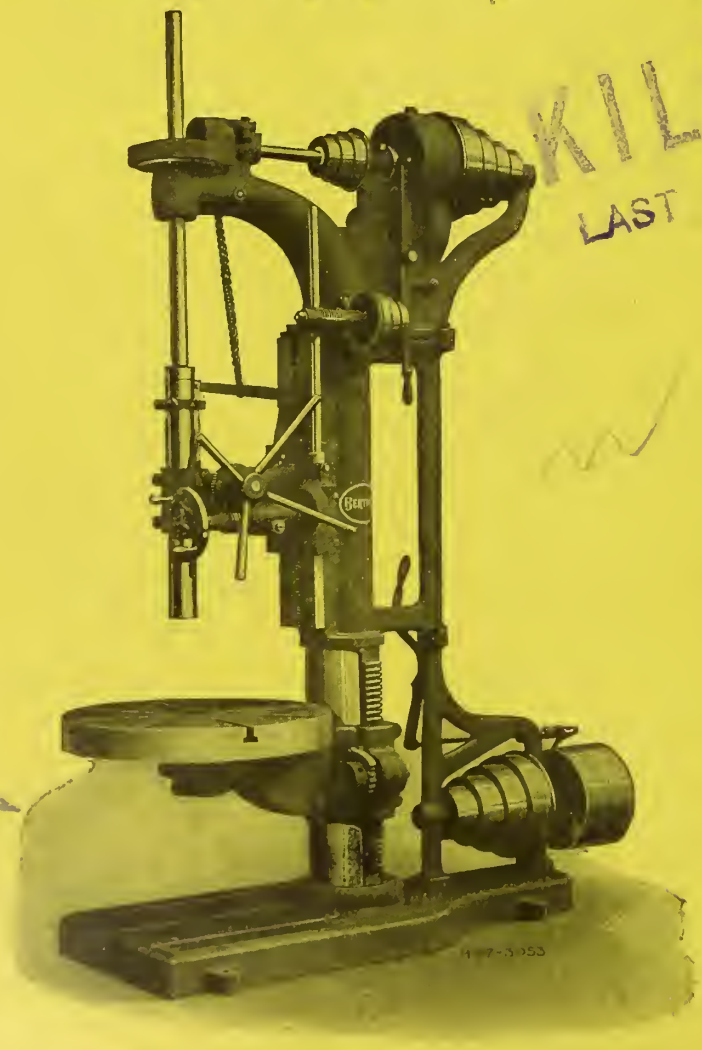

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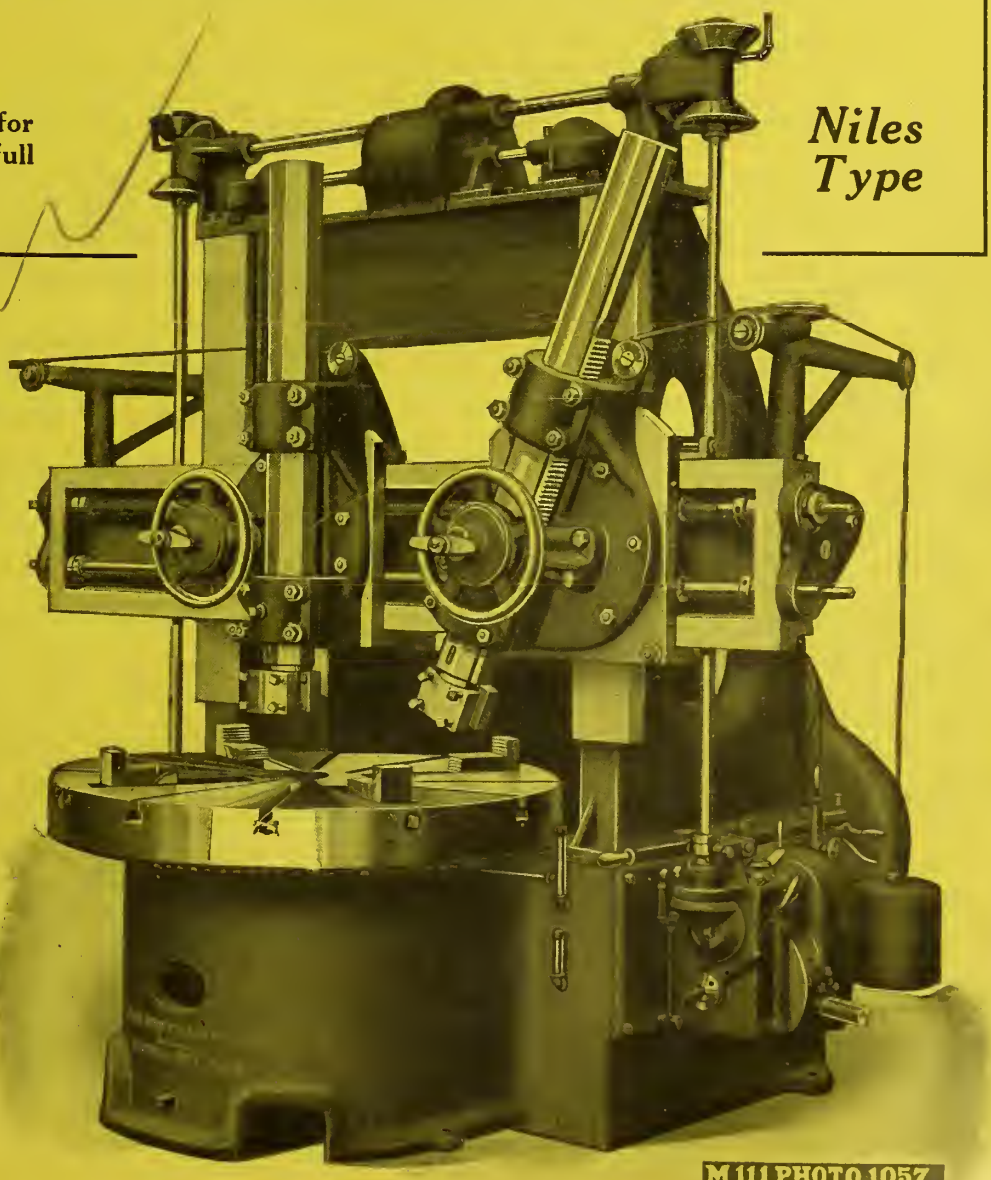

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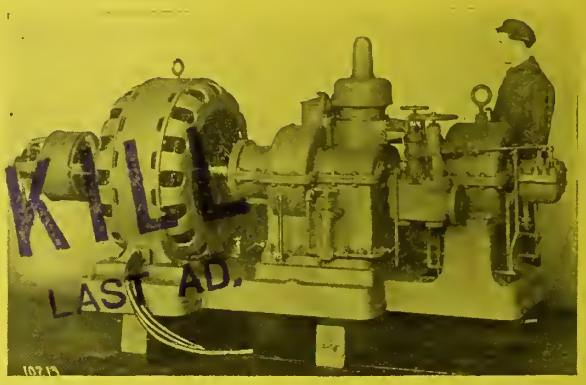

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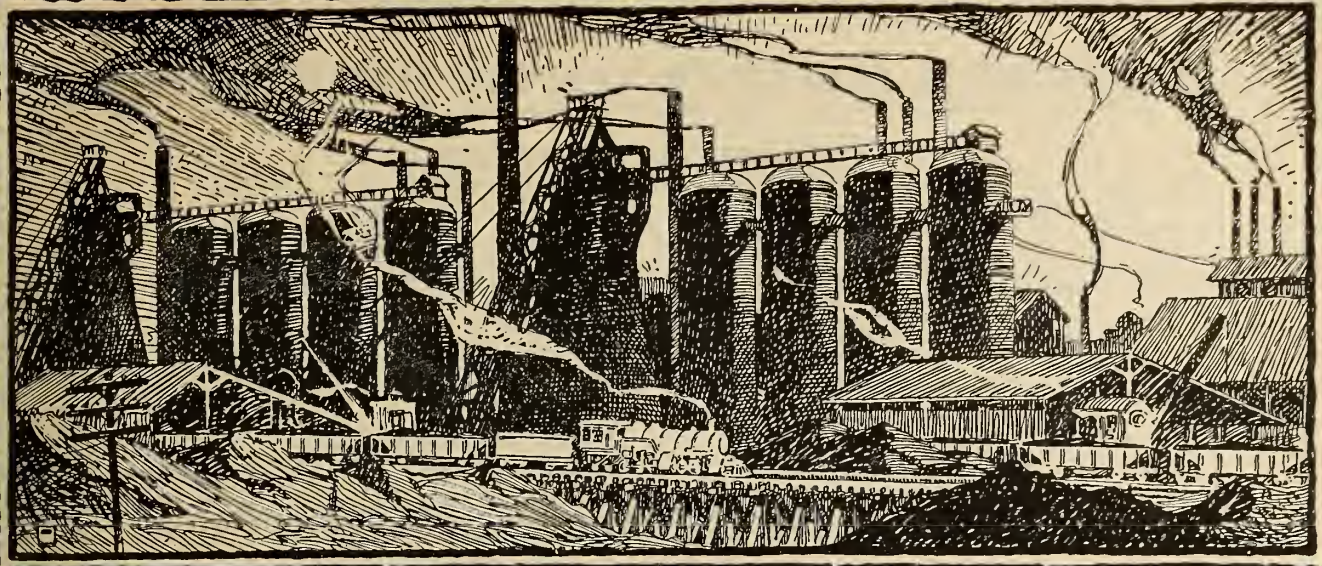


LITTLE WORDS WITH BIG MEANING

Quality

According to "Webster," Quality is "an excellence of character; natural superiority."

Service

Webster's definition of "Service" is: "The performance of labor for the benefit of another."

We use these words advisedly—fully understanding their definitions—and realizing the obligation we place upon ourselves by their continued use in connection with our products of Iron and Steel, and our attitude to the people we serve.

THE

STEEL COMPANY

OF

CANADA

LIMITED

MONTREAL HAMILTON

Pig Iron,
Steel & Iron Bars,
Horse Shoes,
Steel and Iron Products.

Steel Billets,
Track Spikes &
Bolts, Forgings, Wire
of every description.

GENERAL RAILWAY SIGNAL COMPANY
OF CANADA LIMITED

Railway Operating Engineers, Manufacturers and Contractors
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling
Electric Interlocking

Electric Interlocking

Mechanical Interlocking

Highway Crossing Gates

Highway Crossing Bells

A-P-B. Automatic Block Signals for Single Track

A-C. and D-C. Automatic Block Signals for Double Track

Advantages of Absolute-Permissive Block Signaling (A-P-B)

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signaling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.

Head Office and Works
LACHINE, QUEBEC

GALENA OILS

HAVE NO EQUAL IN

QUALITY, EFFICIENCY and ECONOMY

SOLE MANUFACTURERS OF

Celebrated Galena Coach, Engine and Car Oils

LUBRICATION ON A GUARANTEED BASIS

ELECTRIC RAILWAY LUBRICATION A SPECIALTY

Perfection Valve and Signal Oils

Galena Railway Safety Oil—Made especially for use in headlights, marker and classification lamps.

Galena Long Time Burner Oil—For use in switch and semaphore lamps, and all lamps for long time burning, avoiding smoked and cracked chimneys and crusted wicks.

TESTS AND CORRESPONDENCE SOLICITED

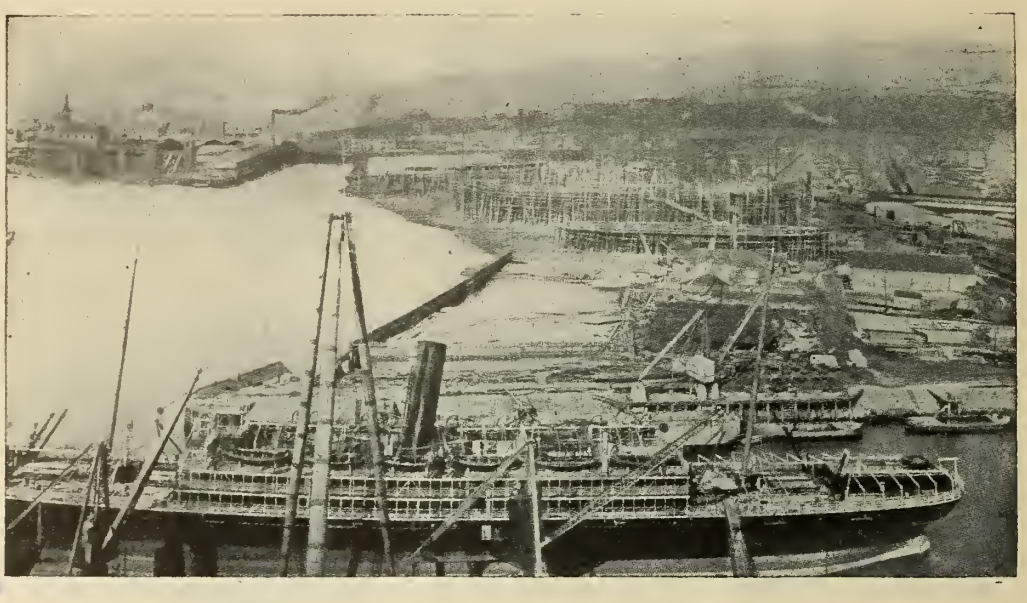
KEEP STANDING LAST ADVERTISEMENT

Galena Signal Oil Company

Works

Franklin, Pa., and Toronto, Ont.

Canadian Representative — Robert McVicar, 603 Shaughnessy Bldg., Montreal, Que.



Shipbuilding Plant Equipment

Machine Tools,
Wood Working Machinery,
Cranes, Trolleys,
Storage Battery, Trucks,
Hand Trucks,
Chain Hoists,
Rope Blocks,
Transmission,
Scales,
Small Tools,
Valves,
Steam Goods,
Motors,
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Air Compressors,
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Engines,
Oxy-Acetylene Outfits,
Flare Lights, Etc., Etc.

Fairbanks-Morse Machinery and Supplies will help you to equip your plant most expeditiously and economically.

We have been making a special study of the Shipbuilders' requirements, and will gladly give, on request, full information on a wide line of machinery and supplies.

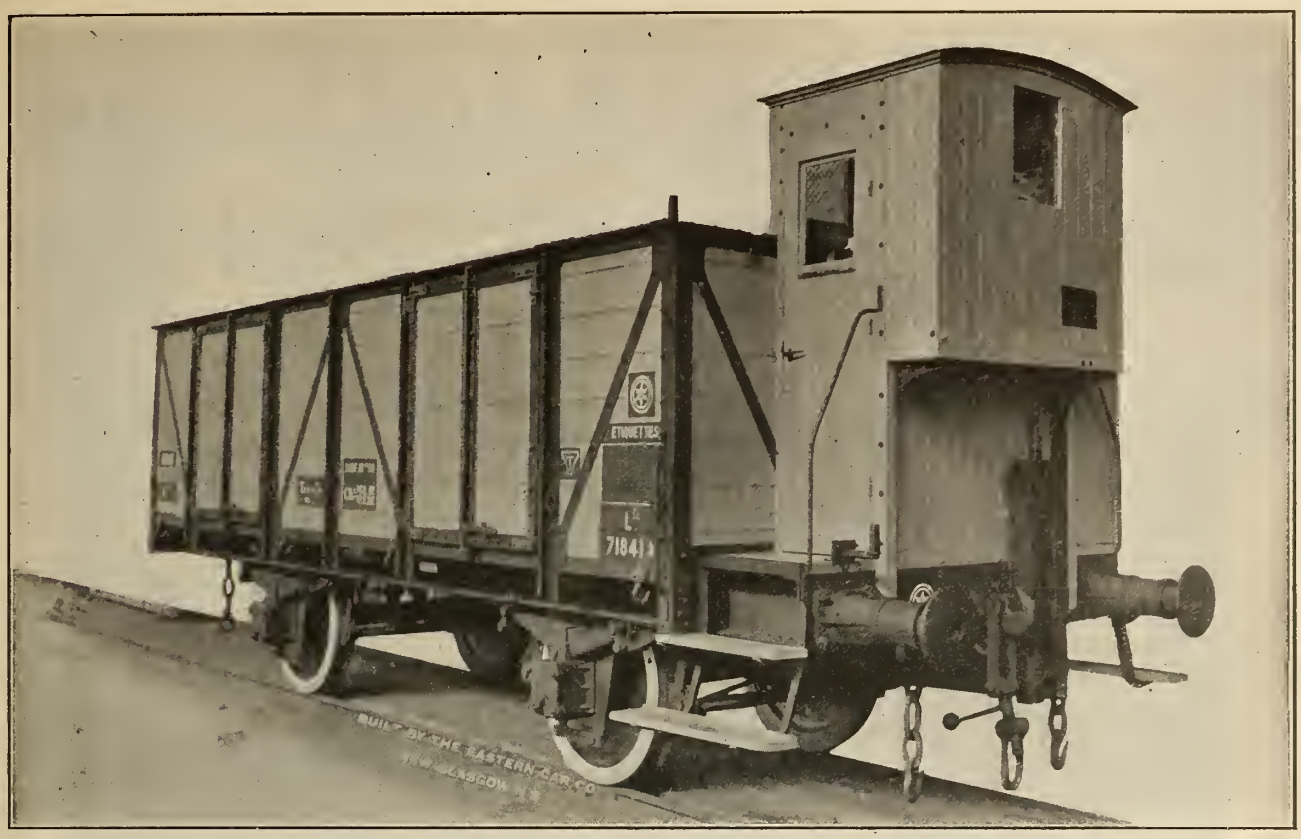
Equip your plant with Fairbanks-Morse Machinery. Fit the boats with Fairbanks-Morse Supplies.

"Canada's Departmental House for Mechanical Goods."

The Canadian Fairbanks-Morse Co., Limited

St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Windsor,
Winnipeg, Saskatoon, Calgary, Vancouver Victoria.

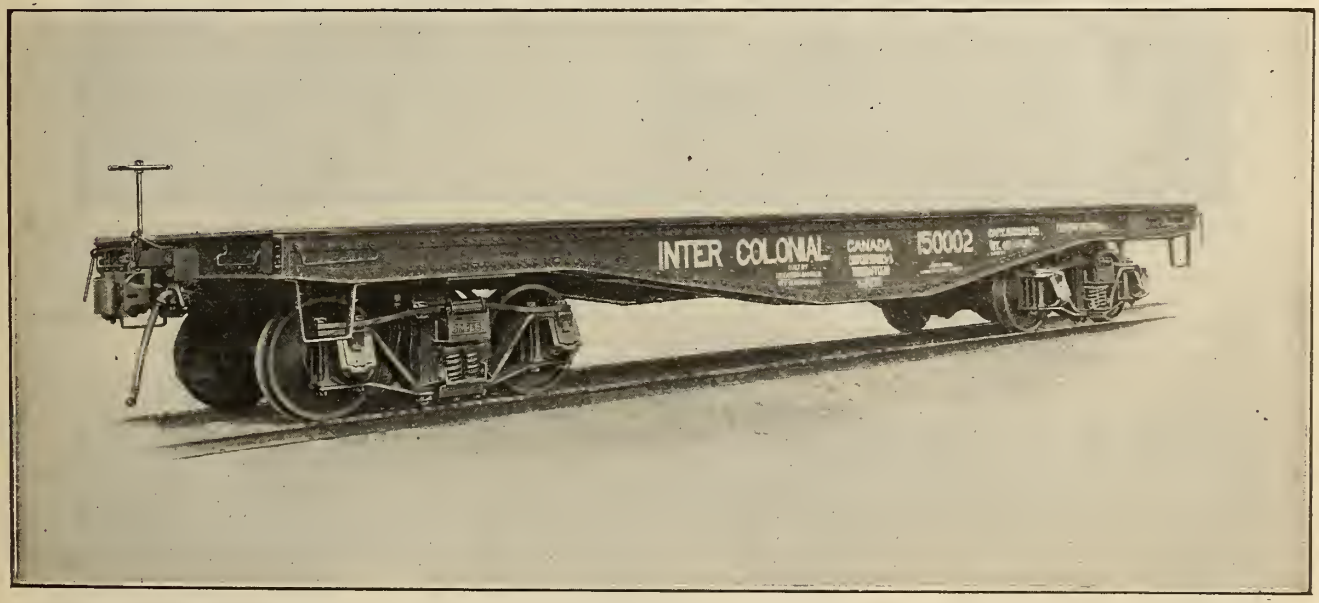
Canada's Departmental House for Mechanical Goods



ONE OF 2,000 GONDOLA CARS NOW UNDER CONSTRUCTION FOR THE FRENCH GOVERNMENT.

FREIGHT CARS TO FOREIGN ORDER

We have unexcelled water and rail shipping facilities for the export of freight cars of all types abroad or to United States markets. Our manufacturing capacity reaches to 40 cars per day. Although fully employed in filling and conducting negotiations for further foreign orders, our exceptional output facilities enable us both to take care of these and others in the order in which they are received.



75 TON SPECIAL PIT CAR FOR CANADIAN GOVERNMENT RAILWAYS.

FLAT CARS, CABOOSES, AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

Eastern Car Company, Limited

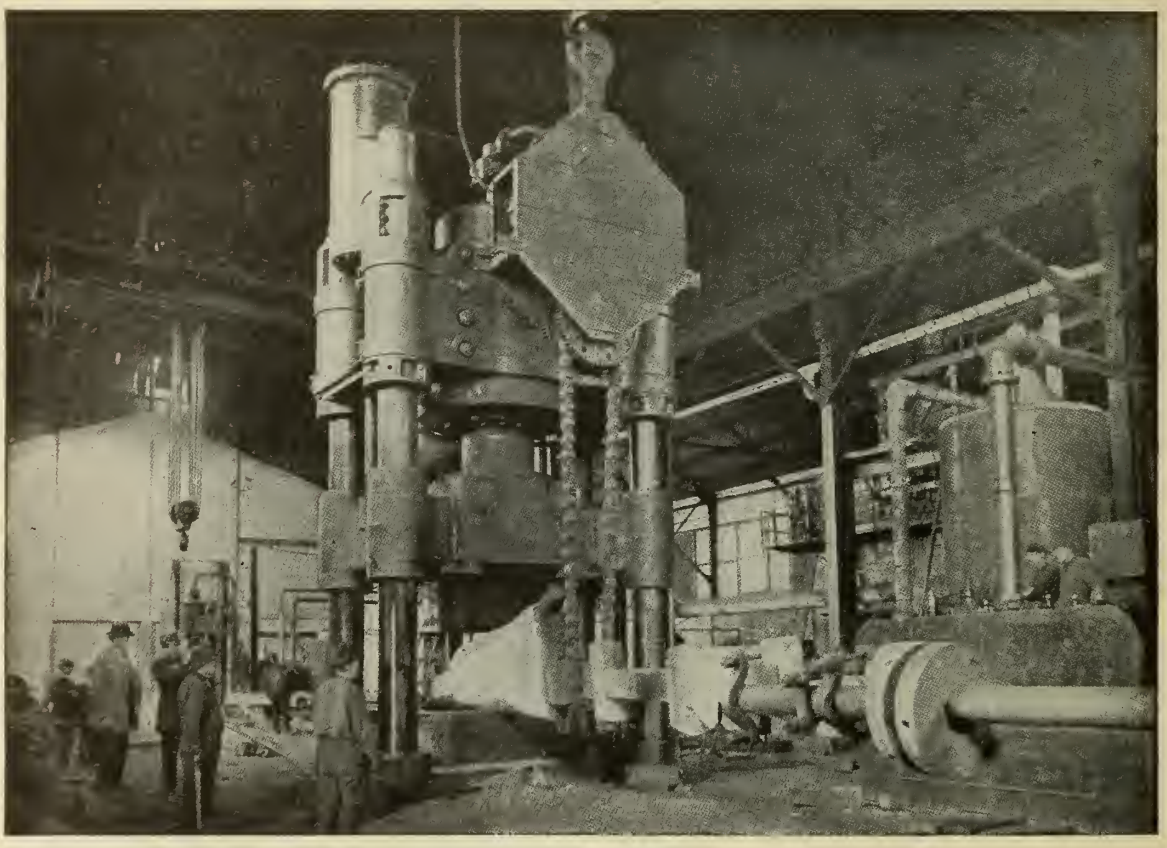
General Offices and Works, New Glasgow, N.S. **Montreal Office, Room 14 Windsor Hotel**

Nova Scotia Steel & Coal Company

LIMITED

Manufacturers of Steel for Shrapnel Shells and Admiralty Forgings | Only Company in Canada producing Steel Ingots by the "Harmet" liquid process

Can supply Forgings up to 40 Tons in weight to all Admiralty and Lloyd's Tests and Specifications



FORGING A RUDDER FRAME.

Why "Harmet" Liquid Process Steel Ingots are Superior to Ordinary Steel Ingots:—

1. Prevention of cracks due to shrinkage; of internal stresses and resulting cracks and fissures.
2. Early cessation in the crystallization of the metal, and the production of fine crystallization without cleavage planes.
3. Lessening of segregation, i.e., reduction of tendency of carbon and other impurities to concentrate in the central and upper parts of the ingot.
4. Prevention of "pipes" or interior cavities, and thus preservation of absolute solidity in the ingot.
5. Improvement in physical properties.
6. Reduction in waste of ingot.

OUR modern Steam Hydraulic Forge Shop at New Glasgow, N.S., part of which is shown above, and our large Steel Plant at Sydney Mines, N.S., equal the very best in America.

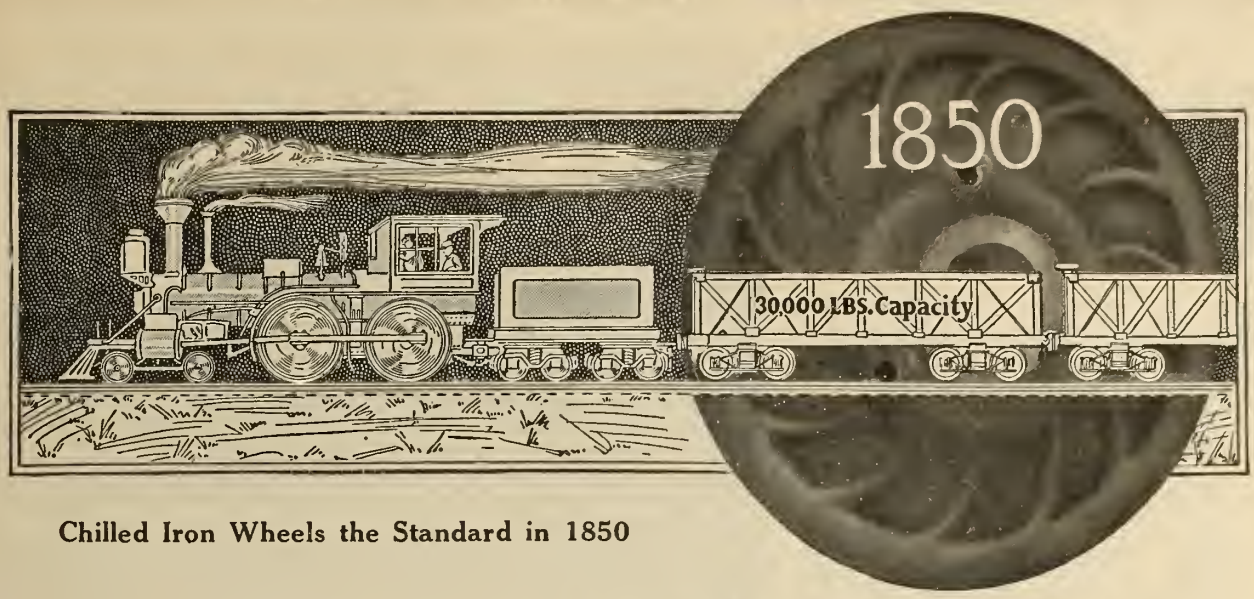
On the shortest notice, we can supply forgings of all shapes and sizes, made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods. It has always been the policy of "Scotia" to hold a position in the front rank of trade, and by the recent additions to plant, this policy has been maintained in a practical manner, bringing "Scotia's" equipment abreast of the best foreign forges.

For prices and ful particulars, write to

Head Office, NEW GLASGOW, N.S.

Western Sales Office, Room 14, Windsor Hotel, Montreal



Chilled Iron Wheels the Standard in 1850

The Wonderful Single Service Chilled Iron Wheel

Considered from a chemical, physical and metallurgical standpoint, the Chilled Iron Wheel possesses certain inherent properties which are not found in other metals.

The higher combined carbon in the tread or running surface of the wheel produces the hardness which is so necessary for a maximum wear and the chilled treads will not crush or flow under the heaviest traffic pressure.

The plates are soft with an open fracture which enables the wheel to resist temperature stresses due to brake application.

The hubs are soft, which insures a strong and perfect axle fit.

These conditions are ideal for service and there is no other metal that possesses this graded hardness of structure.

The single service, one-wear chilled iron wheel, because of its hardness, will give a greater mileage per unit of metal worn away than any other type of wheel.

25,000,000 now running.

Association of Manufacturers of Chilled Car Wheels

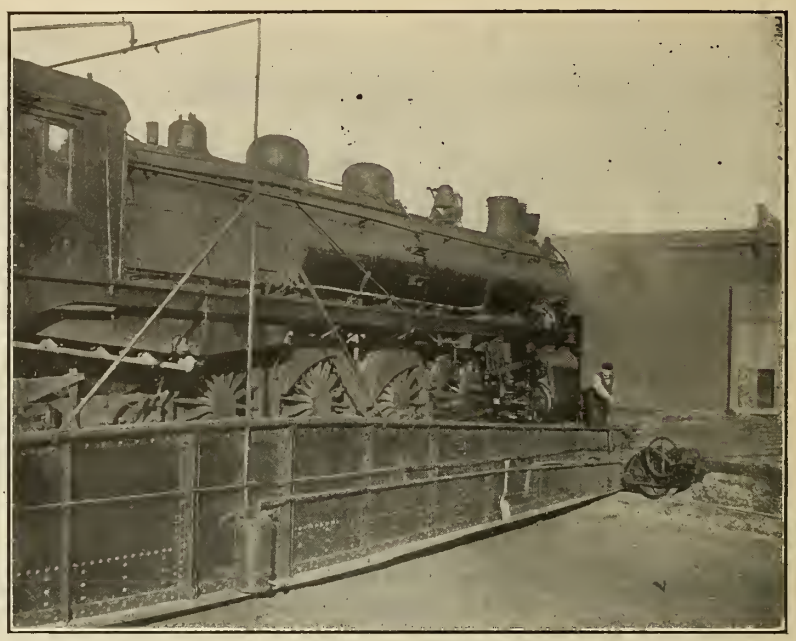
1228 McCormick Building, Chicago

Representing Forty-eight Wheel Foundries Throughout the United States and Canada. Capacity 20,000 Chilled Iron Wheels Per Day

Chilled Iron Wheels the Standard today

The Canadian Pilling Tractor

is operated successfully from the Atlantic to the Pacific. Operated by either air or electric motor.

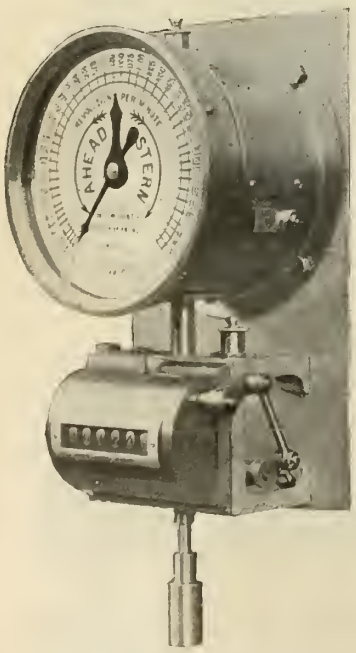


Made in Canada

Canadian Pilling Turntable Tractors

Taylor & Arnold, Limited

Montreal **Winnipeg** **Vancouver**



Engine Room Indicators (Speed)

Engine Counters

Ships Telegraphs for Engine, Twin Engine, Stokehold, Steering and Docking

Chadburn's (Ship) Telegraph Co'y, Ltd.
Bootle, England

Made in Canada *Sole Canadian Agents*

Taylor & Arnold, Limited

Manufacturers of Railway and Marine Specialties

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Do Not Hesitate

BUY THE "BEST"

"DOMINION" Wire Rope

FOR DREDGES

The Dominion Wire Rope Company, Limited

Winnipeg Montreal Toronto

General Service Cars

Otis Dump Cars

For Standard or Special Service

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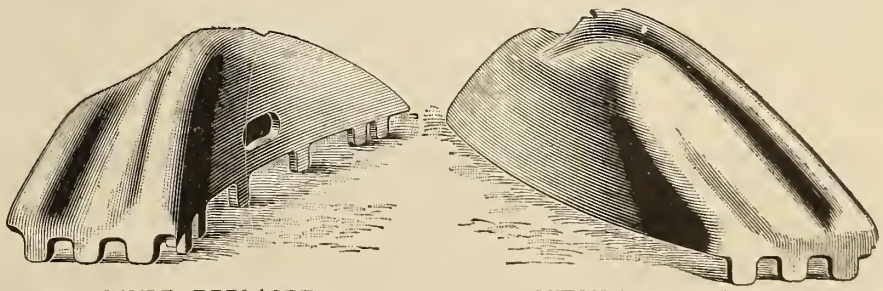
–SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA–

"Alexander" Car Replacers

Re-rail your Rolling Stock without calling out the WRECKING CREW.
Will RE-RAIL the heaviest locomotive.

Velocipedes,
Push Cars,
Hand Cars,
Track Tools



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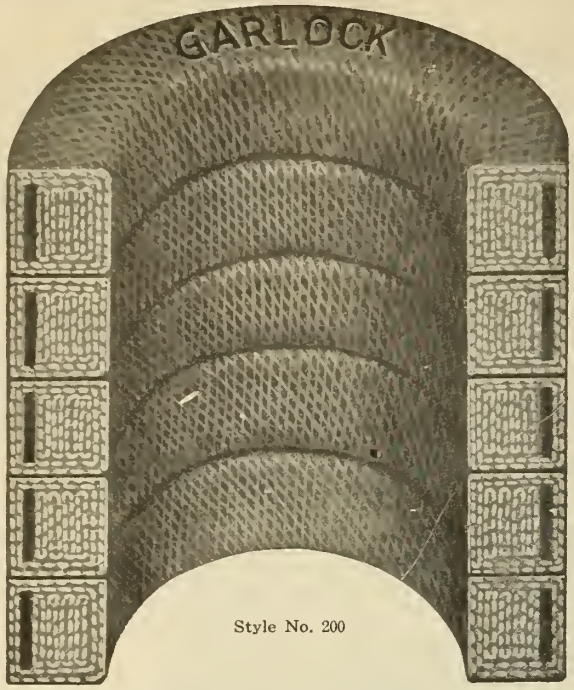


Style No. 200

Garlock High Pressure Piston Rod Packing

Is built up in rectangular form and uniform shape and exact sizes are thereby obtained.

Asbestos packing, which is rolled around a rubber core and afterwards distorted by running through a square die, does not retain its shape or size.

The best materials we can buy are used in the manufacture of our high pressure packing.

The length of service obtained from it is greater than that secured from other makes, therefore the labor cost of applying and adjusting is less.

Our packings are sold at net weights; weights of tubes and boxes are not included.

Every pound of our high pressure packing carries with it the Garlock guarantee of satisfactory and economical service.

We will promptly replace or refund the cost of any of our packings which may prove unsatisfactory to our customers.

THE GARLOCK PACKING COMPANY - Hamilton, Ontario

Branches :
Montreal, Que., 342 St. James St. Toronto, Ont., Continental Life Bldg.
Winnipeg, Man., Galt Building

SCALE

The object of the many expensive devices that are applied to locomotives for the purpose of saving fuel is defeated by scale gradually building up on the heating surfaces of the boilers.

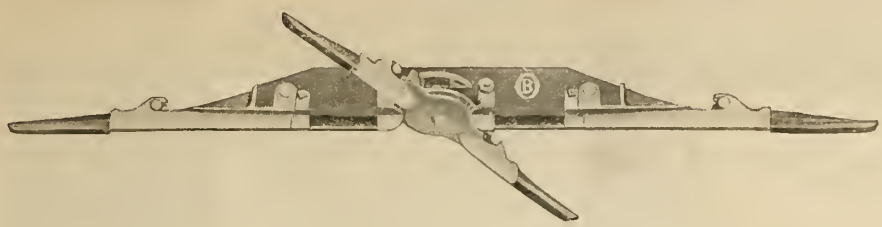
It has been proven by careful investigation that the loss of efficiency due to scale formation is much greater than is generally known. Incrustation ranging from 1-32nd to 1-16th of an inch thick causes a loss of from 7 to 15% in heat units.

Investigation will show that the cost of **Dearborn Treatment** necessary to prevent scale formation is a small percentage of the saving that it is possible to make by keeping the heating surfaces of the boilers clean.

Send gallon samples of the water supplies for analysis and further information.

Dearborn Chemical Company of Canada, Limited

1220-1230 Dundas Street, TORONTO, CANADA



Type C Insulated Adjustable Cross-over.

Low Installation and Maintenance Charges

The O-B Type C Insulated Adjustable Cross-Over is used at crossing of trolley wire where one wire is to be insulated from the other. It is adjustable between the angles of 45° and 90°.

Wires are not cut in installation. It is only necessary to remove one machine bolt to put the wires in place.

Insulated runner pieces with bronze arcing tips are removed and replaced as a unit.

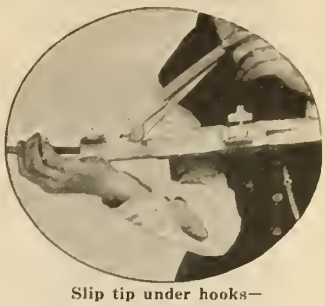
O-B Cam Tips form a smooth approach for the wheel. The pictures at the right show how easily they are put on.

There are many different types of O-B Cross-Overs—one for each service requirement.

Pages 210-218, Catalog No. 16.

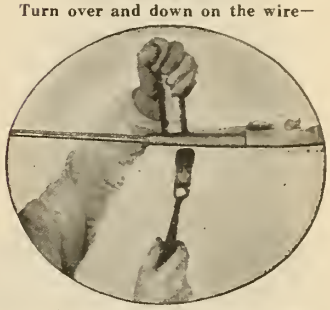
The Ohio Brass Company

Mansfield, Ohio



Slip tip under hooks—

Turn over and down on the wire—



Clinch the lips and the job is done.

See the

Canadian Northern Rockies

en route to the PACIFIC COAST

by the Natural Wonders of Jasper Park
and Mount Robson, Monarch of the Range

You will be amply repaid. Convenient Train Service. Summer Tourist Fares.

For through tickets, information and our handsome Mountain Booklet apply to nearest C.N.R. Agent or General Passenger Dept., Montreal, Que., Toronto, Ont., and Winnipeg, Man.

CANADIAN NORTHERN RAILWAY

50 YEARS IN THE BUSINESS

Five Facts About Famous Five Files

They are made from high carbon steel.

The heat treatment for each file is scientifically determined.

The grinding is done by machinery, which insures a perfect surface for cutting.

The teeth are mathematically accurate, insuring a sharp, even cut.

They are recognized as standard tools by mechanics everywhere.

Be on the safe side and specify "Famous Five" Files when ordering.

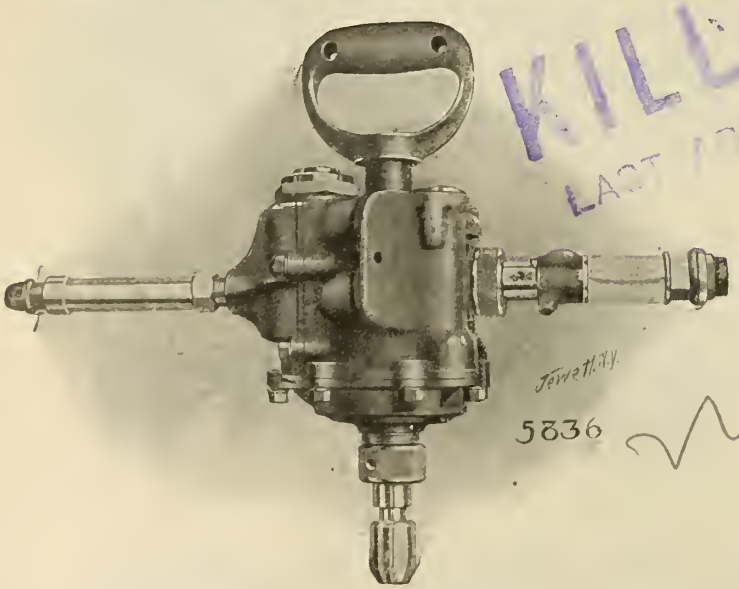
Kearney & Foot American **Great Western Arcade Globe**

Made in Canada By

The Nicholson File Company

PORT HOPE ONTARIO

OVER 60,000,000 FILES A YEAR



No. 12 Reversible "Little David" Wood-Boring Machine. Capacity 4 inch holes in wood, spindle speed 450 R.P.M. No. 13 bores 2 inch holes and No. 14, 1 inch.

"Little David" Wood Borers

are money-savers in wooden ship-building.

Why? Because they are **light, powerful** and **speedy.**

The largest size weighs about 10 lbs. less than any other borer of the same capacity.

The air motor used is 20% more efficient in air used per horse power than other similar tools.

Simplicity and durability are strong features of the design of these machines.

Let us send you Bulletin 8507 describing "Little David" Drills, Borers and Grinders. You will find it suggestive in many ways.

We furnish complete pneumatic equipment for wooden ship work, Compressors, Drift Bolt Drivers, Trenail Drivers, Air Tools for Driving Oakum, also Riveters, Chippers, Reamers, Drills, etc., for steel ship work.

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Commercial Union Bldg., Montreal, Canada **Works, Sherbrooke, Que.**

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The **MOORE SYSTEM** of Refrigeration, Heating and Ventilation provides the greatest measure of protection in **all** seasons.

The **MOORE SYSTEM** is economical—provides 20% more loading space, requires 20% less equipment, and 20% less operation and repairs.

The **Refrigerator** is dry and refrigerates all the load with one-third less ice.

The **Heater** protects all the load against frost in coldest weather. It constantly supplies fresh air and removes gases, fumes and odors. It keeps the load fresh and prevents wilt, shrivel, smoke, taint or freeze. It is operated from outside the car, is simple and requires no special attendant. It **can** be used in **any** refrigerator car, and **should** be used in **all** refrigerator cars.

It is the system that reduces damage claims to a minimum.

Refrigerator, Heater and Ventilator Car Co.
St. Paul, Minnesota

MANGANESE
Special Track Work

FOR

STEAM and ELECTRIC RAILWAYS

We invite your enquiries for 1917 requirements.

Canadian Steel Foundries, Limited
P.O. Box 1630 - MONTREAL

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YOU CAN BETTER APPRECIATE THE WONDERFUL QUALITY OF

DU PONT FABRIKOID
REG. U. S. PAT. OFF.

Its base is a specially woven, very strong cotton cloth. The base of coated splits is a thick, pulpy piece of flesh, much weaker than the cloth. Both are coated with practically the same materials. Both are embossed or grained in the same way.

Fabrikoid is fully guaranteed.

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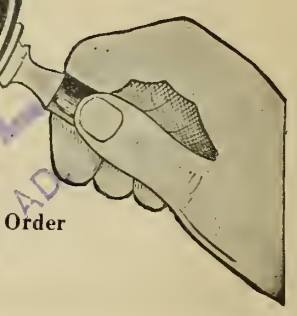
VII ORDER IT NOW



Every Car Builder Should Acquaint Himself With the Superior Quality of Fabrikoid. A Trial Order Will Convince You.

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Railroad Department Representatives
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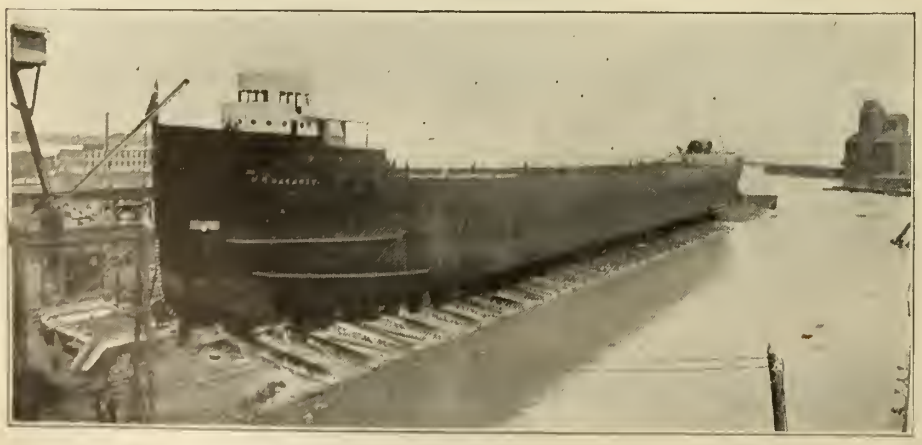
Steel Ships, Engines, Boilers, Castings, and Forgings

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK



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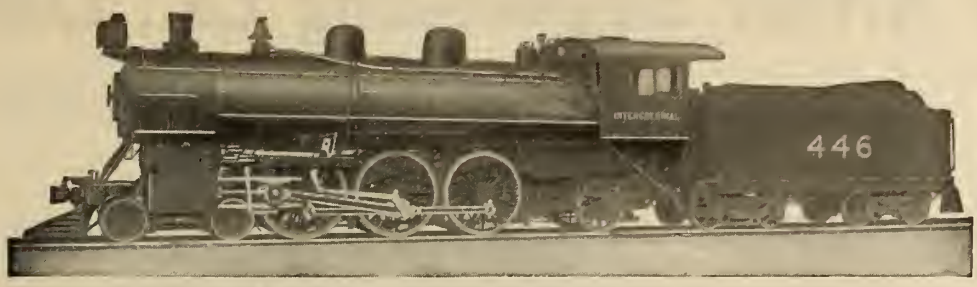
Two Dry Docks and Shops

EQUIPPED TO OPERATE

Day or Night on Repairs

Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE—INTERCOLONIAL RAILWAY
Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

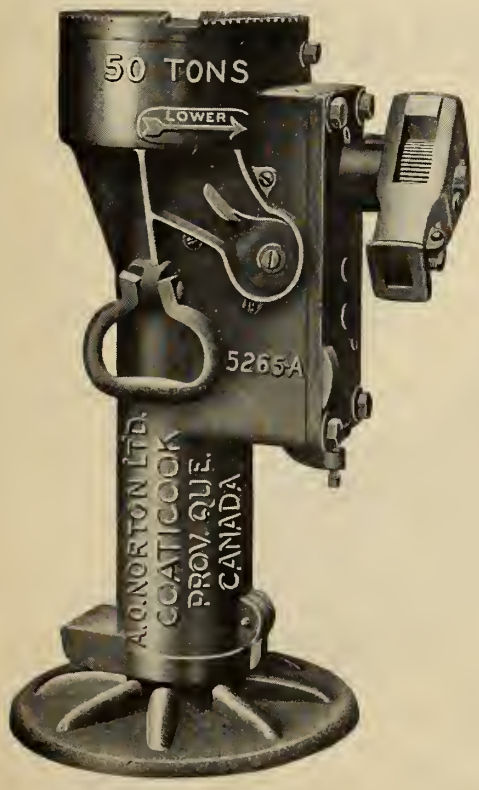
On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA



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For all Classes of Service

10 to 100 Tons Capacity

In Stock for Immediate Shipment.

Send for Illustrated Catalogue No. 29.

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Stock Carried by Canadian Agents: MUSSENS LIMITED
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Port Arthur Shipbuilding Co., Limited

Port Arthur, Ont.

Designers and Builders of every type of vessel, for both Great Lakes and Salt Water Service. 700 ft. solid concrete dock for repair work of every description.

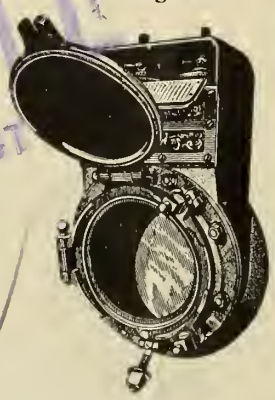
Most Modern Ship Building Plant on the Great Lakes

Marine Specialties

Marine Pop Valves

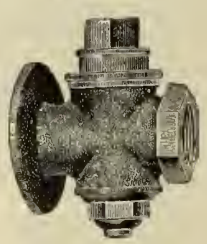
Single or Twin Type

Port Lights



British and Domestic Patterns

Marine Cocks



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Screwed, Flanged or
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Manufactured by

T. McAvity & Sons, Limited

Wholesale and Retail Hardware
Brass and Iron Founders

Established 1834
Cable Address, "McAvity, St. John"
Codes, A.B.C. 4 and 5 Editions

ST. JOHN, N.B., Canada

Branches at
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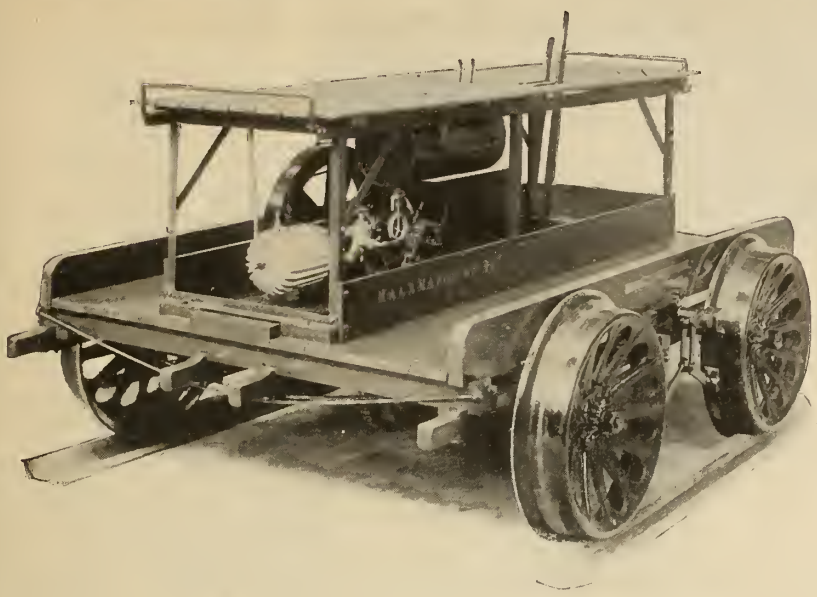
Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

Kalamazoo Railway Supply Company

KALAMAZOO, MICH., U.S.A.

"STERLING"

HACK SAW BLADES

Are made to suit all requirements. They are a satisfactory and economical investment, and you will find them invaluable for your work.

Used with "STERLING" Power Hack Saw Machines they make a combination that will mean a saving of time and money.

Write for particulars.

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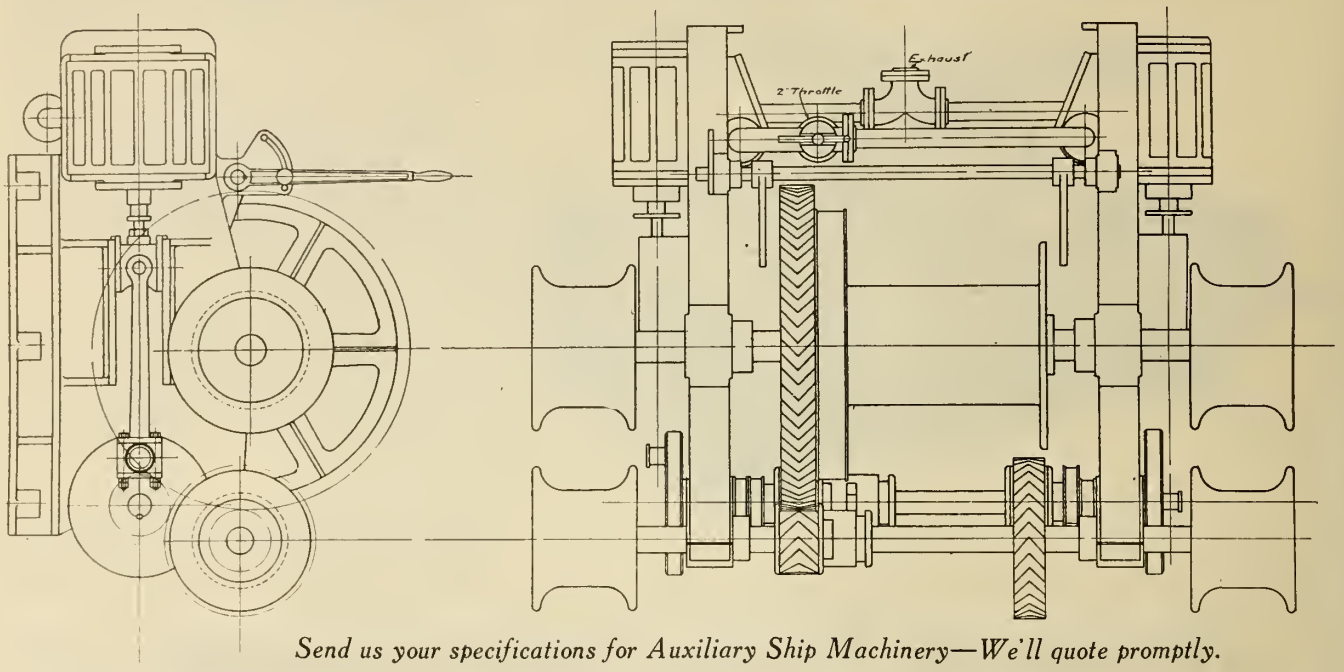
Cargo Winches, Trawl Winches, Anchor Windlasses, Ash Hoists, Dock Winches, Derricks, Etc.



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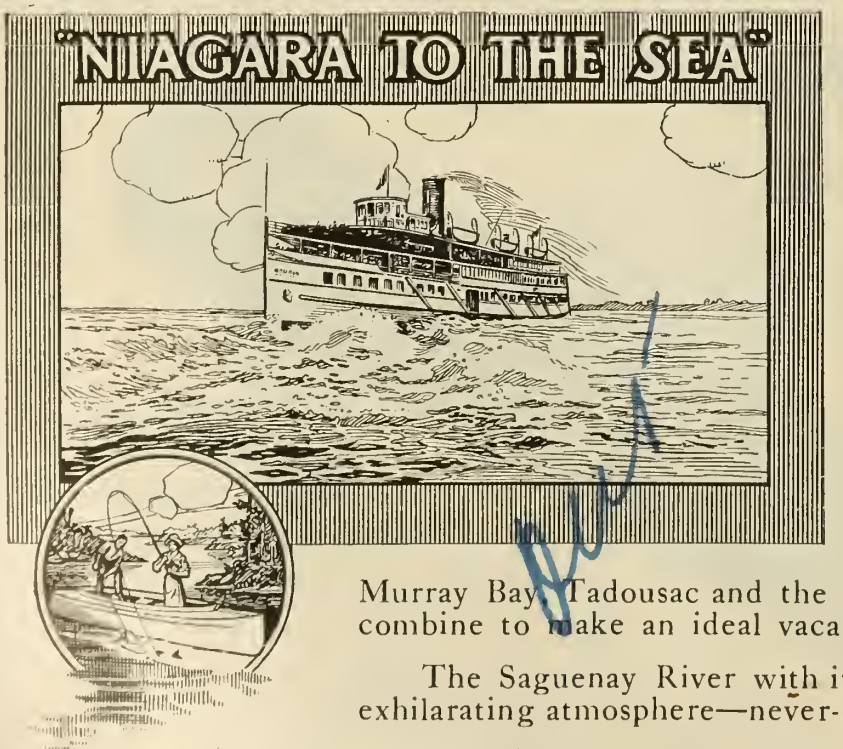

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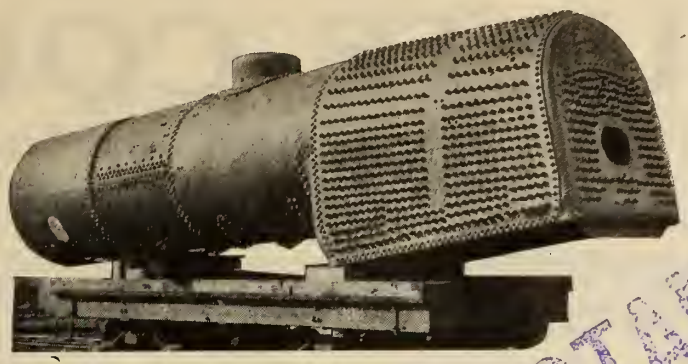

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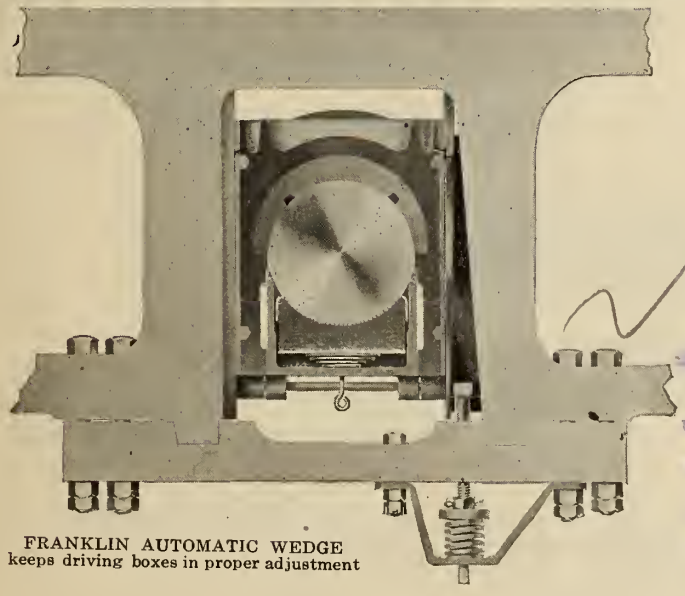

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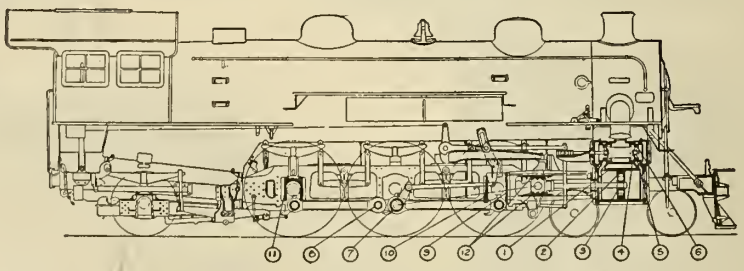

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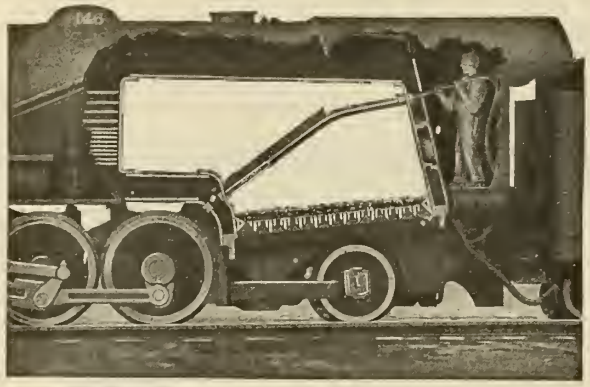

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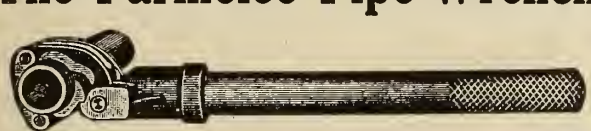

Price List C

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10 in.	1	⅜, ½, ¾, 1 in.	$5.00	$2.25	⅜, ½, ¾, 1 in. $ .75
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Canadian Railway and Marine World

August, 1917.

Train Line Maintenance.

By A. McCowan, Supervisor Car Works, Canadian Northern Railway, Winnipeg.

The report of the Interstate Commerce Commission's Division of Safety for the year ended June 30, 1916, stated that there were 908,566 freight cars inspected, of which 3.72% were found defective; and 27,220 passenger cars, of which 1.82% were found defective. The defects which were found by the inspectors were given in detail in tabular form. Those directly chargeable to the air brake numbered 18,696, which was far above those chargeable to any other part of the car, the next nearest being couplers and parts. The number of defects per thousand cars inspected was 45.06. Of this number 20.58 defects per thousand cars inspected were chargeable to visible parts of air brakes; the next nearest percentage being couplers and parts, 6.09. The remaining 18.39 was chargeable to hand brakes, ladders, steps, hand holds, height of couplers, uncoupling mechanism and running boards as follows: Uncoupling mechanism, 4.17; hand holds, 5.; height of couplers, 1.08; steps, 0.62; ladders, 0.77; running boards, 2.20; hand brakes, 4.55.

We see from this the great relative importance of better train line maintenance. I believe it is possible to cut this percentage down materially by better maintenance of the train line. What are some of the most frequent defects in the train line? I believe they are defective hose and loose and broken train pipes at the hose connection. This percentage shown on visible parts of the air brake does not bring out the actual state of defective train lines, because we, of necessity, have to watch this matter closely and replace most defective hose or broken train pipes immediately. They, therefore, could not be discovered by Interstate Commerce Commission inspectors. In attacking the problem, therefore, we should not only attempt to cut down the percentage of cars which the commission finds defective because of the air brake, but decrease the material and labor in all repairs and renewals. I have gone into the life of the air hose with the idea in mind that there is a chance of decreasing very materially the number of hose necessary for renewals, and thereby the cost of renewals. The general opinion seems to be that the average life of hose is about eight months for air hose and one season for steam hose. I am of that opinion in regard to air hose, but in Western Canada we find the average life of steam hose is a little over four months. This, however, may be looked upon as a season in certain parts of the United States, but could not be considered such in the north.

A railway periodical stated in 1912 that the average life of hose, a couple of years previously, was only eight months, and that at that time the life of hose was probably less because the quality of hose was lower, and that the railways bought poor hose because mechanical destruction killed it in a few months anyway, whether it was good or bad. It is the opinion of people familiar with the hose question that a hose should last years if not subjected to mechanical injury. Since it seems that the average life is only eight months, there is then a chance for increasing the life of hose 20 months; in other words, making it last 4½ times as long. Let us see what this means in dollars and cents.

In the United States there were in 1915 in service 2,370,532 freight cars, 55,810 passenger cars, and 98,752 company service cars—a total of 2,525,094; and 66,229 locomotives. This means that there were in use 4,741,064 hose on freight cars; 111,620 on passenger cars; 197,504 on company service cars, and 66,229 on locomotives, or a total of 5,116,417 hose. This does not include hose on front ends of locomotives or between engines and tenders. The renewals of these 5,116,417 hose, with a life of eight months, would be at the rate of 7,674,626 a year; while if the life were three years, they would be at the rate of only 1,705,472 a year. This is a saving at which we should aim in the use of materials only. There are many other things which, in the aggregate, probably represent an even larger amount of money, viz., the labor of applying and taking off, the cost chargeable to train delays caused by hose or train pipes bursting in transit, capital account tied up in material, etc. Hose which costs from 30c to 60c or more a foot, if the life of the hose can be increased from eight months to 36 months, will make a saving in renewals of 5,969,154 air hose a year, which, at 55c each for 22 in. hose, would be $3,293,000.

It is claimed that loose or broken train pipes are even more prevalent than defects in hose, and this is borne out by the table of statistics. The train line often breaks just back of the angle cock, when cars are pulled apart. Mr. Kroft stated before the Car Foremen's Association in 1908 that it was his opinion that there were 20 breaks in the train line to one in the air hose when cars were pulled apart without uncoupling hose. What causes all these defects in the train pipe? And decreases so greatly the life of the hose? An inspection of the scrapped hose pile will show very plainly that most of the defects in hose are at the nipple end. This is where the great majority of hose fails. The train pipe breaks just back of the angle cock, or at least that is where most of the breaks occur. These facts point plainly to the jerking apart of the cars, while hose are coupled, as being the main cause. When cars are pulled apart, the hose bends at the nipple end. The fact that the bend is there and that that is the place where the great majority of defects in hose develops, proves conclusively that the short life of hose is mainly chargeable to pulling the cars apart. I do not mean to say, however, that pulling the cars apart is entirely responsible for defects at the nipple end. When a hose is not coupled up and a car is switched around the yard, the hose swings constantly and all the strain comes on the nipple end. The strain on the hose when cars are pulled apart without uncoupling, with train line fully charged, is said to be 500 lb. This not only causes rupture of the hose at the nipple end, but it stretches the hose and weakens the fabric throughout the entire length. This stretching is responsible for more hose failures than bending at the angle cock. The porosity of the hose is often charged up to poor material, when, as a matter of fact, it is really caused by jerking apart. In a test of 22,000 pieces of air hose described in a railway periodical, 82% were found to be porous. and the porosity was not localized but extended all along the hose.

We are accustomed to assume that tonnage reduction in winter is necessary because of slippery rails, greater radiation of heat, and therefore less heat applied to the work of heating the boiler, poor lubrication, etc. Investigations of one road have shown that a great deal of this tonnage reduction is necessitated because of leaks in the air line—the impossibility of providing enough air to operate the brakes on long trains. This subject of leakage is a very important one, not only for its effect on the tonnage that may be hauled and amount of fuel consumed, but also because of its effect on the operation of the compressor pump and delays which are caused by air sticking. Leaks may be classified under the following heads: 1. Leaks of hose coupler proper. 2. Leaks in the hose itself. 3. Leaks where the hose connects with the coupler. 4. Leaks where the hose couples to train pipe. Leaks in the coupler proper are usually chargeable to the wear of the materials and gaskets, or to the coupling being poorly made by the brakemen or carmen. Leakage is also caused by snow, frost and ice. Further, when air hose freezes it often becomes so stiff that it will not bend at all. This causes the joint between the two hose to leak whenever there is any movement between the couplings, and also causes leaks at the joints at the angle cock where the hose is often pulled loose. In a report to the M.C.B. Association in 1915, F. W. Brazier, of the New York Central, said that "with a 100-car train, the leakage should be kept down to 2 lb. or less. Keeping the leakage down to a minimum saves fuel, air hose, the compressor and the boiler." He also said that it requires 1 lb. of coal and 7 lb. of water to compress 35 lb. of free air in the compressor. A 100-car train requires 180 cu. ft., and with a 4 lb. a minute leakage (which is not unusual) the compressor has to pump 40 cu. ft. a minute additional. This is equal to 2,880 cu. ft. an hour, which requires burning 82 lb. of coal an hour and using 574 lb. of water. A leakage of 5 or 6 lb. is not uncommon, and a conservative estimate of the coal consumed is 860 to 1,720 lb. On many trains the leakage in five minutes is equal to the air necessary to make a full service application.

Ralph Wolfe, in a paper before the Car Foremen's Association on the care and maintenance of air brakes, said: "In order to get the proper operation of the brakes there are many factors to be taken into consideration: 1. The efficiency of the pump and what it costs to pump against leakage on big trains. 2. The brake pipe leakage and if the rate of reduction is sufficient to cause undesired quick action of the triples. 3. The length of piston travel in order to get the proper brake cylinder pressure on a given brake-pipe reduction, which will have the proper retarding effects on each car. 4. The results obtained due to unequal distribution of braking power, throughout the train. While the question of leakage is the most important of all, with an 80-car train of 10 in. equipment we have a volume of 275,200 cu. in. If the conditions were such that we had a 12 lb. brake pipe leakage a minute, we would be losing 130 cu. ft. of free air a minute, which would be equivalent to the efficiency of the 8½ in. cross compound pump. If the leakage was 6 lb. a minute, we would be losing 65.5 cu. ft. of free air a minute, which would be equivalent to the efficiency of the 11 in. pump. It is estimated that the 11 in. pump consumes 200 lb. of coal an hour. This would require 4,800 lb. of coal to operate the pump 24 hours. Estimating the price of coal at $2 a ton, it would cost $9.60 to pump against a 6 lb. leakage on an 80-car train for 24 hours. If thirty trains were being handled under the same conditions for 24 hours, it would cost $288 for fuel alone. While working under the same conditions with the 8½ in. cross compound pump, the cost of fuel would be approximately $100 pumping against leakage."

Another report on leakage made up by a railway man is as follows: "Comparative cost of maintaining 70 lb. brake pressure and 100 lb. main reservoir on a 60-car freight train (engine boiler pressure 200 lb.), in one case against a brake pipe leakage of 12 lb. a minute, and in the other a brake pipe leakage of 5 lb. a minute. Twelve pounds a minute brake pipe leakage equals a loss of 18.20 cu. ft. of free air, which represents a loss of 1,092 cu. ft. an hour and 10,920 cu. ft. for 10 hours. Five pounds a minute brake pipe leakage equals a loss of 7.54 cu. ft. of free air a minute, 542 cu. ft. an hour and 4,520 cu. ft. for 10 hours. An engine fitted with an 11 in. compressor would consume about 47 tons of coal, while supplying a 12 lb. a minute brake pipe leakage continuously for 1,000 hours. The same engine and compressor supplying a 5 lb. a minute leakage continuously for 1,000 hours would consume approximately 19½ tons of coal; 47 minus 19.5 equals 27½ tons; 27½ ÷ 47 equals 0.58, or 58% savings obtained by simply reducing the brake pipe leakage from 12 lb. to 5 lb. a minute.

The difficulties encountered and time consumed in coupling and uncoupling hose in winter are considerable. Even at zero the hose becomes so hard as to lose all flexibility, and during coupling and uncoupling it is necessary to bend it, which usually cracks the rubber, making it porous. A hammer is commonly used for hitting hose couplings to make them lock. This tends to jar hose fittings out of place in the frozen bag at the nipple and coupling sleeve, causing them to leak when the train is in motion, especially when rounding curves. The hammering on hose couplings also damages them to such an extent that it is necessary to remove the hose on account of gaskets not fitting properly. The same trouble is experienced on the road on account of couplings being drawn up by frozen hose on curves, causing the brakes to creep on and making it necessary for trainmen to hammer couplings down in place. Another difficulty is that all angle cocks are not in a proper position to allow hose couplings to meet in line, consequently, the hose is twisted before they can be made to lock, and in case of their being pulled apart they very often do not unlock, breaking the hose or train pipe. The time ordinarily consumed in coupling and uncoupling hose of a 40-car freight train, under ordinary conditions at the different winter temperatures, is as follows:

		Min.		Min.
Zero . .	1 man uncoupling	45	Coupling	50
5 to 10 below	" "	50	"	55
15 to 20 "	" "	55	"	60
25 to 30 "	" "	65	"	70
35 to 40 "	" "	70	"	75

The figures in the last column allow for coupling hose only. Any extra time required for changing hose, gaskets, etc., depends entirely on conditions. This ordinarily takes 15 to 20 minutes, sometimes it takes an hour.

The amount of both yard and road detention, chargeable to train line trouble, not to say anything of car and freight delays, is worthy of consideration. An hour and a half over each locomotive division is considered a good average of road detention to each freight train handled under northern winter conditions, caused mainly through hose troubles, creeping of brakes, and extra time taken for pumping up, in releasing. Along with this comes flat and shelled wheels from creeping brakes; also there is excessive strain on draft rigging. A broken train line means cutting out of car, and not unusually 24 hours delay to same in getting repairs made, which, where freight is concerned, is serious.

The opinion has been quite prevalent that air hose defects could be remedied by more careful attention and adherence to higher specifications in the purchase of hose. This is not altogether true, because the greater number of hose is scrapped because of mechanical injury and not through defective material. J. Sheafe, formerly Engineer of Tests of the Illinois Central, gave in an article in a railway periodical the results of an exhaustive inspection and recording of performance on thousands of air brake hose. This showed that the 30c hose showed up even better than the 65c hose, proving that the railways do not take proper care of hose, and that the majority of renewals are necessitated by mechanical injury. He further stated that there were only two things which would minimize the liability of accidents and increase the life of hose, viz., preventing mechanical injury and showing the date on which the hose should be removed, in legible figures, so that it would not be left on so long that it would be weakened.

The defects which develop because of the present hose connections between cars, as well as safety considerations and convenience, led inventors at an early date to the consideration of an automatic connector. Quite a few connectors have been developed to the point of trial, but until very recently none has had an extensive installation. We are using an automatic connector on the Canadian Northern in both freight and passenger service, and have 207 cars equipped. The first installation was made June 6, 1914, so that we have had three years experience with them. The connector which we are using is the Robinson, and this has also been installed on a large number of C.P.R. passenger cars. In the northern country, where the climate is sometimes very severe, we have greater need for a connector than railways operating in the south. It requires a good deal more steam to heat our cars, and the results of leakage are magnified. Our trains are harder to move, because the lubricating oils harden, and for this reason we have to cut down unncessary stops or delays to a minimum. The makers of this connector are so confident of the life of hose which the connector makes possible that they guarantee a life of three years for air hose used with it.

I am not going to give you a description of the mechanical features of this connector, but only some of the results which have been obtained with its use. W. L. Crocker, Chief Dispatcher, Canadian Northern Ry., Fort Rouge, Winnipeg, says that all trainmen have no hesitancy in affirming that, in their belief, both road and terminal detention would be materially reduced if all cars were equipped with these connectors. On the question of leakage I will quote from one of the reports which has been given on the connector: "During the intensely cold weather of December and January, when temperatures sometimes in excess of 40 degrees below zero were recorded in certain parts of Canada, where these cars were in operation, no trouble was experienced from leakage in connection with the device, although at the same time it was found impossible to prevent very serious leakage in ordinary hose." I quote further from the same report the following: "To one familiar with yard and train service, there appears to be no room for argument about the need of such a device. The greater life of hose, the absence of broken train pipes resulting from uncoupling cars without first disconnecting the hose, the saving of time and labor in making up trains, and the reduction in the cost of pumping air, all of which might be classed as direct or apparent economies, would undoubtedly justify the cost of application alone, but the writer is even more impressed with the benefits that would be secured indirectly. Numerous leaks are found in hose and gaskets at all seasons of the year, almost entirely the result of the practice referred to above, viz., pulling hose apart, thereby injuring the fabric and inner tube. In very cold weather, however, when the hose freezes, the difficulty in preventing air leakage becomes a controlling factor in the operation of long freight trains, and they have to be reduced in length to a point where the air pressure can be maintained irrespective of the tonnage ratings or the ability of the locomotives to haul them. Even at the best, this factor is responsible for a very great amount of terminal detention and labor on the port of car men trying to stop leaks." The connector increases the life of hose because it eliminates all mechanical wear thereon. The hose is never jerked or strained. Frozen hose does not interfere with its operation and leakage and breaks are cut down to such an extent that it is possible to run longer trains. We have found on the Canadian Northern that the Robinson connector saves us a lot of money. We estimate the comparative cost about as follows: Cost of present equipment, $23.90; cost of Robinson equipment, $36.95; difference, $13.05; cost of maintenance of present equipment for three years, $45.05; cost for Robinson equipment, $37.49; thus the saving in three years is $7.56. For six years the cost of maintenance of present equipment is $90.10, while for the Robinson connector it is $47.80, including the interest on the

difference in cost between the two systems. This means a saving of $42.30 per passenger car in six years for hose alone, made possible with this connector.

I have not made any mention of signal hose, and but little mention of steam hose. If these were taken into consideration the figures of 3,293,000 would be very materially increased. The economy in hose and train pipe breakage, however, sinks into insignificance when compared with the immense amount which would be saved in eliminating train delays and reducing trainmen's wages and coal consumption. If the figures on acceleration of traffic with a connector could be compiled they would represent a saving which would stagger the closest student of railway operation.

Great Northern Railway Report.

The company's fiscal year having been changed to correspond with the calendar year, instead of running from July 1 to June 30, the Great Northern Ry.'s 28th report covers only from July 1 to Dec. 31, 1916. The directors report that there has been no change in the capital account, which remains at $250,000,000, of which there has been issued $249,476,850. The balance is held for acquiring certain stock, etc, still outstanding. The bonds outstanding are for $197,697,909.09, at June 30, 1916.

The company's investment in Canadian companies, on account of advances made to pay for property, construction, additions and betterments, has been changed during the period, as follows:

Midland Ry. of Manitoba .....Credit	$4,757.50
Manitoba Great Northern Ry.	3,092.65
Brandon, Saskatchewan & Hudson's Bay Ry.	642.16
Crow's Nest Southern Ry.	1,177.65
Nelson & Fort Sheppard Ry.	1,558.92
Vancouver, Victoria & Eastern Ry. and Nav. Co.	254,949.62
Total	$256,663.50

The Bedlington & Nelson Ry. Co., in Aug., 1916, removed the track and abandoned its railway, extending from the International Boundary to Wilkes, B.C., 12.04 miles.

The President, in his report, refers to the completion of the Vancouver, Victoria & Eastern Ry & Navigation Co.'s line between Connor (formerly Sumas Landing) and Kilgard, B.C., which was placed in operation, Sept. 5, 1916, giving the company a through Canadian line between Oroville and Vancouver.

Total revenue from transportation.	$46,395,269.22
Revenue from operation other than transportation	899,149.45
Gross operating revenue	$47,294,418.67
Operating expenses	24,677,301.23
Net revenue	$22,617,117.44
Railway taxes accrued	2,949,432.32
Operating income	$19,667,685.12
Other income	1,356,137.70
Gross corporate income	$21,023,822.82
Net corporate income	$17,201,176.43
Dividends $8,731,254.00	
Appropriations 138,613.74	
	8,869,867.74
Balance to profit and loss	$8,331,308.69

The company's Canadian investments are valued in the general balance sheet as follows:

Midland Ry. of Manitoba	$2,348,218.39
Manitoba Great Northern Ry.	2,070,970.33
Brandon, Sask., and H. B. Ry.	2,150,642.16
Crows Nest Southern Ry.	4,217,663.24
Nelson and Fort Sheppard Ry.	2,120,578.43
Red Mountain Ry.	310,619.07
Vancouver, Victoria & Eastern Ry.	22,503,878.85
New Westminster Southern Ry. ..	260,000.00
Total	$35,982,570.47

Birthdays of Transportation Men in August.

Many happy returns of the day to:

A. C. Barker, Superintendent of Telegraph and Time Service, Intercolonial Division, Canadian Government Railways, Moncton, N.B., born at Lacadie, Que., Aug. 5, 1878.

V. T. Bartram. ex-Purchasing Agent, Timiskaming & Northern Ontario Ry., now of Toronto, born at Ottawa, Aug. 2, 1880.

J. C. Beckwith, Division Engineer, Canadian Government Railways, Moncton, N.B., born at Fredericton, N.B., Aug. 1, 1875.

C. B. Brown, M.Can.Soc.C.E., Assistant General Manager, Eastern Lines, and Chief Engineer, Canadian Government Railways, Moncton, N.B., born at Ithaca, N.Y., Aug. 27, 1879.

J. S. Carter, District Passenger Agent, C.P.R., Nelson, B.C., born at Aurora, Ill., Aug. 14, 1864.

A. E. H. Chesley, General Accountant, Dominion Atlantic Ry., Kentville, N.S., born near Annapolis Royal, N.S., Aug. 27, 1877.

A. B. Chown, Travelling Passenger Agent, G.T.R., Pittsburg, Pa., born at Belleville, Ont., Aug. 4, 1887.

G. T. Coleman, Car Service Agent, Ontario District, C.P.R., Toronto, born at Carleton Place, Ont., Aug. 25, 1875.

C. H. N. Connell, Engineer Maintenance of Way, Quebec District, Canadian Northern Ry., Montreal, born at Woodstock, N.B., Aug. 26, 1876.

C. E. Croft, Chief of Commissary Department, Canada Steamship Lines, Ltd., Toronto, born at Cobourg, Ont., Aug. 26, 1882.

E. L. Desjardins, Assistant Superintendent, District 1, Intercolonial Division, Canadian Government Railways, Levis, Que., born at St. Jean Port Joli, Que., Aug. 1, 1859.

L. C. Fritch, ex-General Manager, Eastern Lines, Canadian Northern Ry., now General Manager, Seaboard Air Line Ry., Norfolk, Va., born at Springfield, Ill., Aug. 11, 1869.

J. V. Foy, General Passenger and Freight Agent, Canada Steamship Lines, Ltd., Toronto, born there Aug. 27, 1882.

G. W. Groom, Assistant Superintendent, Central Vermont Ry., St. Albans, Vt., born at Rossville, Ill., Aug. 26, 1872.

G. H. Ham, Head Office Department, C.P.R., Montreal, born at Trenton, Ont., Aug. 23, 1847.

W. B. Harper, Resident Engineer, Laurentian Division, Quebec District, C.P.R., Montreal, born at Baie Verte, N.B., Aug. 15, 1882.

M. B. Helston, Superintendent, Division 4, Western District, Canadian Northern Ry., Calgary, Alta., born at Michigan Ind., Aug. 24, 1869.

W. P. Hinton, Traffic Manager, Grand Trunk Pacific Ry., Grand Trunk Pacific Coast Steamship Co., and Western Traffic Manager, Canadian Government Railways, Winnipeg, born at Hintonburg, Ont., Aug. 30, 1871.

J. D. McDonald, Assistant General Passenger Agent, G.T.R., Chicago, Ill., born at Toronto, Aug. 27, 1855.

T. McHattie, ex-Master Mechanic, Eastern Lines, G.T.R., Montreal, born at Dufftown, Banffshire, Scotland, Aug. 8, 1854.

M. K. McQuarrie, Resident Engineer, Dominion Atlantic Ry., Kentville, N.S., born at Sault Ste. Marie, Ont., Aug. 17, 1884.

A. H. Mahon, District Locomotive Foreman, Grand Trunk Pacific Ry., Edson, Alta., born north of Ottawa, Ont., Aug. 27, 1874.

W. J. Meakin, Locomotive and Car Foreman, C.P.R., Wetaskiwin, Alta., born Toronto, Aug. 22, 1872.

C. Montgomery, Master Mechanic, Pere Marquette Ry., St. Thomas, Ont., born near London, Ont., Aug. 29, 1860.

W. E. Mullins, General Manager (Freight), United Fruit Co., New York, born at Stratford, Ont., Aug. 13, 1870.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver, B.C., born at Greenwich, Eng., Aug. 27, 1875.

F. H. Phippen, K.C., General Counsel, C.N.R., Toronto, born at Belleville, Ont., Aug. 26, 1862.

W. M. Porteous, District Freight Agent, C.P.R., St. Louis, Mo., born at Edinburgh, Scotland, Aug. 3, 1857.

W. G. Ross, President, Montreal Harbor Commissioners, born at Montreal, Aug. 6, 1873.

W. LeB. Ross, Local Treasurer, G.T. Pacific Ry., Winnipeg, born at Ottawa, Ont., Aug. 9, 1868.

F. C. Salter, European Traffic Manager, G.T.R., and Canadian Express Co., London, Eng., born at Sarnia, Ont., Aug. 31, 1863.

A. O. Seymour, General Tourist Agent, C.P.R., Montreal, born at Ogdensburg, N.Y., Aug. 14, 1887.

S. A. Simpson, Superintendent, Sleeping, Dining and Parlor Cars and News Service, C.P.R., Winnipeg, born at Toronto, Aug. 22, 1880.

J. F. Sweeting, Industrial Agent, Natural Resources Department, C.P.R., Calgary, Alta., born at Worthing, Eng., Aug. 20, 1872.

W. J. Sturges, acting Assistant Purchasing Agent, Grand Trunk Pacific Ry., Winnipeg, born at Fairfield, Vt., Aug. 28, 1877.

L. Tait, Secretary-Treasurer, London St. Ry., London, Ont., born at Hamilton, Ont., Aug. 9, 1882.

F. E. Warren, General Car Foreman, C.P.R., Winnipeg, born at Chelsea, Que., Aug. 29, 1872.

W. B. Way, Superintendent, District 2, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., born at Bowmanville, Ont., Aug. 22, 1867.

H. E. Weyman, Master Mechanic, Levis County Ry., Levis, Que., born at Guildford, Eng., Aug. 27, 1883.

Regina Spur Tracks.—From time to time the Regina City Council built spur tracks to give connection to industrial and warehouse sites, charging the owners of these properties a rental. A subcommittee reported at a meeting of the Council, July 4, that the city's interest in the tracks was not being properly looked after. The committee learned that a number of rentals have not been collected for several years, arrears in some cases dating back six and seven years, and in some cases where property has exchanged hands several times, the city is at a loss to know who should be responsible for the payments. Just how much the arrears amount to and how much property is involved the committee did not learn and doubt is expressed whether the officials are in a position to say without some research the amount over due. The council instructed the subcommittee to prepare a statement of all the spur tracks.

Canadian Government Railways Capital and Operating Statistics.

The Canadian Government Railways, on Mar. 31, 1916, the last date at which figures are available, comprised a total of 4,513.92 miles, of which 4,062.92 were being operated by the Department; 32 miles were being operated under lease by the Dominion Atlantic Ry., and 419.10 miles were under construction. The different lines were as follows: Intercolonial Ry., 1,518.39 miles, on which there are 66.92 miles of second track, and 526.64 miles of sidings, spurs, etc.; there were operated as branches of the Intercolonial, the New Brunswick & Prince Edward Island Ry., 36.05 miles; the International Ry. of New Brunswick, 111.30 miles; and the St. John & Quebec Ry., 119.87 miles; making a total for the Intercolonial of 1,785.61 miles; and the National Transcontinental Ry., including the Lake Superior Branch, leased from the Grand Trunk Pacific Ry., had 2,002.91 miles. The Hudson Bay Ry., 418 miles, is under construction from Pas to Port Nelson, Man., and the Quebec Bridge, also under construction, is 1.10 miles. The capital expenditure on these lines has been as follows:

	Year ended Mar. 31, 1916.	Total Expenditure.
Intercolonial	$7,635,050.25	$115,766,560.24
New Brunswick and P.E.I.	198,511.28	224,211.28
International Ry. of N.B.	2,637.47	3,937.47
P.E.I. Ry.	1,350,472.73	10,841,372.44
Nat. Trans. Ry.	7,078,451.69	159,881,197.46
Quebec Bridge	2,746,813.70	18,295,181.51
Hudson Bay Ry.	4,889,131.77	15,749,908.43
Total	$23,901,068.89	$320,762,368.83

The principal works on the Intercolonial upon which this expenditure was made in 1915-16 included the new terminal facilities at Halifax, upon which $3,162,304 was expended; strengthening bridges, $700,000; car ferry and dock at Mulgrave, N.S., $343,850; Dartmouth to Deans Branch, $300,360; and rolling stock, $2,500,000. The principal item of expenditure on the Prince Edward Island Ry. was on account of the car ferry terminal work at Port Borden, P.E.I., and Cape Tormentine, N.B., $1,322,593.34. The work done on the Intercolonial branch lines was necessary to bring them up to that line's standard, and the expenditures on the National Transcontinental, the the Quebec Bridge and the Hudson Bay Ry. was for construction and completion.

The accounts of the several parts of the Intercolonial Ry. System are kept distinct, as the ownership of the New Brunswick & Prince Edward Island Ry. and the International Ry. of New Brunswick have not yet been transferred to the Government; and as the St. John & Quebec Ry. is operated under an agreement with the New Brunswick Government. Following are the details of operating earnings and expenditure:

Intercolonial Railway.

Passenger traffic	$4,010,879.58
Freight traffic	9,200,339.21
Mails, express, freight, etc.	857,572.62
Gross earnings	$14,068,791.41
Maintenance of way and structures.	$2,489,798.20
Maintenance of equipment	2,367,679.33
Traffic expenses	256,871.81
Transportation	6,930,096.31
Transportation, water lines	50,619.83
Miscellaneous expenses	152,058.44
General expenses	304,391.92
Total expenses	$12,551,495.84
Net earnings	$1,517,295.57

New Brunswick and P.E.I. Ry.

Passenger traffic	$10,404.56
Freight traffic	41,696.60
Mail and express	2,902.86
Total	$55,004.02
Less miscellaneous	4,589.69
Gross earnings	$50,414.34
Maintenance of way and structures.	$40,955.33
Maintenance of equipment	5,822.33
Traffic charges	418.90
Transportation expenses	28,904.26
General expenses	743.81
Total expenses	$76,844.63
Deficit	$26,430.29

International Railway of New Brunswick.

Passenger traffic	$41,067.41
Freight traffic	68,643.57
Mails and express	2,032.38
Total	$111,743.36
Less miscellaneous	7,119.89
Gross earnings	$104,623.49
Maintenance of way and structures.	$62,103.92
Maintenance of equipment	10,311.47
Traffic expenses	1,265.45
Transportation charges	40,475.45
General expenses	2,495.09
Total expenses	$116,651.38
Deficit	$12,027.89

St. John and Quebec Railway.

Passenger traffic	$27,532.08
Freight traffic	38,193.59
Express	215.27
Total	$65,940.94
Less rental	8,198.23
Gross earnings	$57,742.71
Maintenance of way and structures.	$35,508.30
Maintenance of equipment	6,885.81
Traffic expenses	3,036.85
Transportation charges	41,435.45
General expenses	3,890.72
Total expenses	$90,757.13
Deficit	$33,014.42

Prince Edward Island Railway.

Passenger traffic	$181,518.96
Freight traffic	174,454.52
Mails and express	21,937.03
Miscellaneous	13,016.31
Gross earnings	$390,926.82
Maintenance of way and structures.	$144,865.30
Maintenance of equipment	85,304.79
Traffic expenses	10,686.59
Transportation charges	286,068.70
General expenses	18,095.24
Total expenses	$545,020.62
Deficit	$154,093.80

National Transcontinental Railway.

Passenger traffic	$ 473,109.61
Freight traffic	3,776,275.90
Mails and express	38,797.63
Total	$4,288,183.14
Less miscellaneous	529,795.75
Gross earnings	$3,758,387.39
Maintenance of way and structures.	$1,132,714.83
Maintenance of equipment	576,821.07
Traffic charges	90,304.36
Transportation expenses	2,005,086.44
Miscellaneous operations	3,796.31
General expenses	91,805.74
Total expenses	$3,860,528.95
Deficit	$102,141.36

With the exception of the Intercolonial, all the lines show a deficiency. The surplus revenue on the Intercolonial was absorbed by adding $190,000 to the rail renewal account; $100,000 to the fire renewal account; $1,225,895.57 to equipment renewal account and $1,400 on special vote as "compassionate allowances." The deficiencies on operating account on the five other lines, totalling $327,708.76, are provided for out of consolidated account. There was also paid on account of these lines: $10,186.29 as interest on purchase price of $270,000 of the N.B. & P.E.I.R.; $90,000 as interest on purchase price of $2,700,000 of the International Ry. of N.B., and $300,000 on account of rental for the National Transcontinental Lake Superior Branch. The rental of the Intercolonial's Windsor Branch, payable by the Dominion Atlantic Ry., is $22,500 a year.

Following are the general statistics of the various government lines:

Summary of All Lines.

	Earnings.	Expenses.	Surplus or deficiency.
Intercolonial Railway	$14,068,791.41	$12,551,495.84	$1,517,295.57
New Brunswick & Prince Edward Island Railway	50,414.34	76,844.63	26,430.29
International Railway of New Brunswick	104,623.49	116,651.38	12,027.89
St. John & Quebec Railway	57,742.71	90,757.13	33,014.42
Prince Edward Island Railway	390,626.82	545,020.62	154,093.80
National Transcontinental Railway	3,758,387.39	3,860,528.75	102,141.36
Total	$18,430,886.16	$17,241,298.35	.....

Ry.	Passengers carried.	Tons of freight carried.	Locomotive mileage.	Train mileage.	Car mileage.	Gross earnings per Mile of railway.	Engine mile.	Train mile.	Car mile.	Expenses Mile of railway.	Train mile.	% of expenses to gross earnings.
Intercolonial	4,124,387	5,447,722	9,705,642	7,890,939	125,915,220	$9,181.53	$1.45	$1.87	c11.13	$8,187.74	c115.96	88.86
N. B. and P. E. I. Ry.	21,264	74,936	57,176	42,439	275,016	1,426.14	0.88	1.19	18.33	2,173.82	181.07	152.43
International of N. B.	35,950	80,770	76,404	72,500	507,469	934.14	1.37	1.44	20.60	1,041.33	160.90	111.50
St. John and Quebec	42,864	42,000	72,438	68,444	382,808	481.71	0.78	0.84	15.08	757.13	132.60	157.08
Prince Edward Island	412,535	118,862	453,503	367,614	2,280,639	1,422.07	0.36	1.06	17.41	1,982.62	148.26	139.42
Nat. Transcontinental Ry.	401,805	1,984,479	2,711,429	2,286,109	47,697,538	1,870.66	1.39	1.64	7.88	1,021.50	168.87	102.62
Total	5,038,805	8,748,769	13,078,392	10,728,045	177,058,690	.....	....	....	.....	.....	.....	.....

Cost of Maintaining Electric Locomotives

Electric locomotives on the Norfolk & Western Ry., according to that company's report for the six months ended Dec. 31, 1916, proved much more expensive to maintain and operate than steam locomotives. The average cost of repairs, power and lubricants for electric locomotive equipment per 100 locomotive miles was $6,290, while that of repairs, fuel, stores and lubricants for steam locomotive equipment was only $25.21. Repairs were respectively $32.69 and $12.70. Power and lubricants for the electric locomotives cost $30.21 per 100 locomotive miles, as against $12.51 for fuel, stores and lubricants for steam locomotives.

A table in the report divides the steam equipment by divisions and by classes of locomotive (passenger and freight). On the Pocahontas Division, which is the one electrified, repairs to freight and to passenger steam locomotives cost respectively $14.60 and $8.53, while fuel, stores and lubricants cost $15.86 and $6.01, making totals respectively of $30.46 and $14.54.

United States Railways Co-ordinated for the War.

As there appears to be a very general impression that U.S. railways have been taken over by the government in connection with the war, it may be of interest to explain the situation. Almost immediately after war was declared the U.S. railways managements undertook to produce a maximum of transportation efficiency and agreed among themselves to coordinate their operations into a continental railway system. At a meeting of railway presidents in Washington April 7, the following resolution was adopted: "Resolved, that the railroads of the U.S., acting through their chief executive officers here and now assembled, and stirred by a high sense of their opportunity to be of the greatest service to their country in the present national crisis, do hereby pledge themselves, with the government of the United States, with the governments of the several states, and with one another, that during the present war they will coordinate their operations in a continental railway system, merging during such period all their merely individual and competitive activities in the effort to produce a maximum of national transportation efficiency. To this end they hereby agree to create an organization which shall have general authority to formulate in detail and from time to time a policy of operation of all or any of the railways, which policy, when and as announced by such temporary organization, shall be accepted and earnestly made effective by the several managements of the individual railroad companies here represented."

In cooperation with the Council of National Defence and its advisory commission, the direction of this continental railway system has been voluntarily placed in the hands of an executive committee of the Special Committee on National Defence of the American Railway Association, now designated for brevity as the Railroads' War Board, and constituted as follows: Fairfax Harrison, President, Southern Ry., Chairman; Howard Elliott, Chairman of Board, New York, New Haven & Hartford Rd.; Julius Kruttschnitt, Chairman of Executive Committee, Southern Pacific Co.; Hale Holden, President, Chicago, Burlington & Quincy Rd.; Samuel Rea, President, Pennsylvania Rd. System. The ex officio members are: Daniel Willard, President, Baltimore & Ohio Rd., and Chairman of the Advisory Committee on National Defence; E. E. Clark, member of Interstate Commerce Commission.

The railways of the country have been divided into six departments, viz.: the Northeastern, Eastern, Southeastern, Central, Southern and Western, in charge of a general committee of railway managers. In addition, a number of subcommittees have been appointed, covering all parts of the country, on which railway men are handling the railway problems arising from war conditions. The foregoing plan of operation covers all service of the railways—that on behalf of the public as well as that for the government. Under this plan, the government will advise the railways what transportation service it requires, but the responsibility is upon the railway managers to provide it. For that purpose the railways will be operated practically as one system. Government business will receive preferential movement; but for regular service, every effort will be made to prevent abnormal inconvenince. It is believed that this plan will secure efficiency of service and operation.

The Railroads' War Board has notified all railways that the Secretary of War has approved the board's suggestion that the holding of conventions, which stimulate passenger travel, be discouraged, at least until the railways are more nearly able to handle the freight business that is being offered. This action by the board is another step taken to increase in every possible way the freight and troop carrying capacity of the existing railway facilities. Already carriers have been advised to adjust their passenger service and to discontinue to some extent anyway running summer excursions.

The U.S. Council of National Defence announces the creation of cooperative committees on railway cars and locomotives, to serve with the committee on transportation and communication, of which Daniel Willard, chairman of the advisory commission of the council, is chairman. S. M. Vauclain, Vice President, Baldwin Locomotive Works, is chairman of both cooperative committees. It will be the function of these two committees to assist in solving the problem of increasing the U.S. output of cars and locomotives through coordination of the efforts of manufacturers, and to aid in making as efficient use as possible of existing rolling stock. Their duties have been made unusually important through the demand of the allied countries, particularly France, Russia and Italy, for U.S. railway supplies.

Freight Statistics for 1915-16.

The total weight of freight carried over Canadian railways for the year ended June 30, 1916, was 109,659,088 tons, of which 62,950,122 originated on the home roads; 20,421,932 was received from other roads, and 26,287,034 was received from United States lines. No mention is made of freight received from overseas, which is probably treated as freight originating on the home roads. The following table shows the tons carried, with the classification under the heads mentioned:

	Originating on own Lines.	Received from other Lines in Canada.	Received from U. S. Lines.	Total Freight.
Algoma Central & Hudson Bay	729,182	7,476	.....	736,658
Algoma Eastern	1,416,492	212,622	.....	1,629,114
Atlantic, Quebec & Western	60,619	55,199	.....	115,818
Brandon, Saskatchewan & Hudson Bay	36,200	195	12,685	49,080
British Yukon	37,234	.....	.....	37,234
Canada & Gulf Terminal	27,260	5,303	.....	32,563
Canada Southern	1,177,621	608,889	6,237,975	8,024,485
Canadian Government Railways—				
Intercolonial Ry.	5,064,190	1,118,759	.....	6,182,949
Prince Edward Island	110,095	6,761	.....	116,856
National Transcontinental	1,274,337	1,389,706	.....	2,664,043
Canadian Northern	9,781,735	3,098,024	473,621	13,353,380
Canadian Pacific	21,139,674	6,093,794	2,043,404	29,276,872
Cape Breton	5,556	9,292	.....	14,848
Caraquet	28,095	16,138	.....	44,413
Crowsnest Southern	913,403	20,021	2,592	216,016
Cumberland Ry. & Coal Co.	352,259	12,350	.....	364,609
Central Vermont	78,317	284,076	117,747	480,140
Dominion Atlantic	255,868	81,862	6,703	344,397
Eastern British Columbia	97,587	1,998	.....	99,585
Edmonton, Dunvegan & British Columbia	159,906	7,224	.....	167,130
Elgin & Havelock	13,273	2,587	.....	15,860
Essex Treminal	51,295	215,147	.....	266,442
Esquimault & Nanaimo	304,016	58,462	.....	362,478
Fredericton & Grand Lake Coal & Ry. Co.	102,625	7,038	.....	109,663
Grand Trunk	8,423,940	2,337,291	8,299,571	19,060,802
Grand Trunk Pacific	1,085,726	166,328	.....	1,972,054
Hereford	100,057	7,422	2,284	109,781
International of New Brunswick	93,133	2,946	.....	95,079
Kettle Valley	126,828	64,061	16,221	207,110
Lotbiniere & Megantic	54,650	3,210	.....	57,860
Maine Central	.....	.....	239,994	239,994
Manitoba Great Northern	54,522	37,113	15,126	106,761
Maritime Coal, Ry. & P. Co.	277,626	4,450	.....	282,076
Massawippi Valley	150,721	325,721	105,400	581,842
Midland Ry. of Manitoba	4,999	31,581	134,059	170,639
Moncton & Buctouche	15,782	5,359	.....	21,141
Montreal & Atlantic	103,755	1,294,030	326,358	1,724,143
Morrissey, Fernie & Michel	635,196	20,152	90	655,438
Napierville Jct.	11,358	177,060	368,611	557,029
Nelson & Fort Sheppard	25,297	375	5,102	30,774
New Brunswick Coal & Ry. Co.	42,204	2,694	.....	44,898
New Brunswick & Prince Edward Island	52,171	9,138	.....	61,309
New Westminster Southern	64,394	16,256	.....	80,650
Ottawa & New York	72,286	253,871	138,188	464,345
Pere Marquette	116,119	326,179	2,399,056	2,841,354
Quebec Central	828,128	171,027	.....	999,155
Quebec, Montreal & Southern	82,593	231,139	41,725	355,457
Quebec Oriental	42,815	38,667	.....	81,482
Quebec Ry., Light & Power Co.	215,718	11,612	.....	227,330
Red Mountain	446	115	25,124	25,685
Roberval-Saguenay	199,251	13,076	.....	212,327
Rutland & Noyan	226	139,915	7,163	147,304
Salisbury & Albert	39,118	4,569	.....	43,687
St. John & Quebec	42,452	2,292	.....	44,744
St. Martins	15,450	3,818	.....	19,268
Sydney & Louisburg	4,822,381	100,079	.....	4,922,460
St. Lawrence & Adirondack	42,276	198,472	905,433	1,146,281
Temiscouata	151,318	8,667	.....	159,985
Timiskaming & Northern Ontario	426,584	452,726	23,511	902,821
Thousand Islands	13,258	19,607	.....	32,685
Toronto, Hamilton & Buffalo	292,764	534,162	1,470,314	2,297,240
Vancouver, Victoria & Eastern	923,933	51,265	257,130	1,232,328
Victoria T. Ry. & Ferry Co.	6,886	9,983	.....	16,869
Victoria & Sidney	7,974	12,229	.....	20,203
Wabash in Canada	62,812	21,526	2,611,553	2,695,891
York & Carleton	4,182	1,812	.....	5,994
Total	62,950,122	20,421,932	26,287,034	109,659,088

Pere Marquette Railway Reorganization.

The order dismissing the receivers who have had charge of the Pere Marquette Rd.'s affairs, for some considerable time, was signed, June 14, by U.S. District Judge Tuttle at Detroit, Mich. The company was reorganized during the past winter, the plans of reorganization having been approved by the state and federal authorities. The intervening period has been devoted to putting reorganization plans in operation and winding up the receivership affairs.

One of the most important proceedings in connection with the receivership and reorganization was the investigation into "the character of the service, physical condition of the equipment and property, financial history and transactions and practices of the P.M.R.," instituted April 24, 1914, by the Interstate Commerce Commission. It subsequently appeared that many of the transactions of the company, after July 1, 1904, were closely interwoven with the affairs of the Cincinnati, Hamilton & Dayton Ry., consequently that company's affairs were investigated also. The affairs of the latter company have no special interest for Canadian railway men, and those of the P.M.R. are only interesting in so far as they are concerned with the purchase and operation of the Lake Erie & Detroit River Ry.

The Pere Marquette Rd. was a consolidation of three lines in the U.S., brought about in 1900, and the Lake Erie & Detroit River Ry. was acquired in Aug., 1902, from Hiram Walker & Sons, of Walkerville, Ont., who were represented in the transaction by F. H. Walker. The Canadian railway had been offered to one of the combinations of capitalists which were dealing with the P.M.R. affairs, in Feb., 1902, for $6,000,000, but the offer was declined. Another group of capitalists dealing with the P.M.R. control acquired the entire capital stock of the Canadian line, 14,000 shares, at $205 a share, Hiram Walker & Sons to receive in payment therefor 20 year collateral trust gold bonds of the Pere Marquette Rd. for $2,870,000, bearing interest at 4%, the contract providing that 3% only was to be paid during the first two and a half years. The Canadian line was to be free from floating debt when the deal was consummated. This contract was finally completed in September, with the National Trust Co., Toronto, as trustee for the $2,870,000 of P.M.R. bonds, and with the P.M.R., instead of the group of capitalists who had negotiated the deal, as the purchasers of the L.E. & D.R.R. stock. The Canadian company had at the time of the sale outstanding $3,000,000 of 5% gold bonds which the P.M.R. was to acquire at $103½. The P.M.R. assumed the obligation by resolution at a special meeting, June 9, 1903, accomplishing this undertaking by the issue of $3,000,000 of its own 4½% 30 year gold bonds, secured on the L.E. & D.R.R., and guaranteed as to principal and interest by the P.M.R. The arrangements with the Canadian line were completed in Oct., 1903, but the contract was not signed until December of the same year, the prime considerations being: "1. The payment of the interest on the $3,000,000 bonds of the L.E. & D.R.R., and all other fixed charges and operating expenses. 2. The setting apart out of the earnings of the L.E. & D.R.R., as conducted by the P.M.R., of the amount of interest on the $2,870,000 bonds given in payment of the L.E. & D.R.R. stock, being a sum to equal a dividend of 6.15% on the capital stock until June 30, 1915, and a dividend of 8.20% thereafter."

These facts are all set out with considerable detail in an Interstate Commerce Commission report issued recently. The report then sums up the matter of the P.M.R. Canadian connection by pointing out that it secured trackage rights for freight traffic only over the Michigan Central Rd. to the Niagara frontier; that the operations over these lines are accounted for as a part of the operations of the whole system; that officials claim the Canadian lines pay their own way, although it is a matter of controversy between the Canadian and United States bondholders. The accounts, as written into those of the P.M.R., showed the cost of road, with final adjustments to be $4,659,891; offsetting liabilities: capital stock, $1,400,000; first mortgage 5% bonds, $3,000,000; 5% equipment bonds, $112,000; current liabilities, $147,891; total, $4,659,891. The report concludes: "The road's income and profit and loss transactions, beginning prior to Jan. 1, 1892, and including the business of the London & Port Stanley Ry., resulted in an accumulated surplus of $193,468.13 at the end of 1901. In 1902 there were extraordinary charges made to both income and profit and loss, including $13,856 paid in dividends, and these left the road on Dec. 31, 1902, with a deficit of $13,955.57. Those dividends, according to the records available, were the first ever paid. In 1903, under P.M.R. control, gross revenues increased from the $640,018.92 of 1901 to $968,875.26, practically 50%, whereas expenses increased less than 30%. The result permitted payment of the bond interest of $150,000 and stock dividends of $86,100, all according to contract, it will be observed, and left a surplus of $12,003.51."

Barbed Wire Along Railway Lines.—The Board of Railway Commissioners passed general order 196, June 29, as follows: Re sec. 254 of Railway Act and complaints filed with the board against the use of barbed wire in fences erected and maintained by railway companies in compliance with the requirements of the said section, it is ordered that in municipalities where barbed wire is prohibited railway companies are forbidden to use barbed wire in the future construction or reconstruction of fences along their respective lines; provided that barbed wire may be strung along the top of woven wire fences in stock range country; barbed wire may be strung along the top of closed board fences to prevent trespassing; barbed wire may be used along the bottom of a woven wire fence, where it is necessary to fence against pigs.

Central Ry. of Canada.—The company's solicitors in Montreal, presented a petition to the Court of Exchequer, June 28, asking for an order confirming an arrangement between the company and its creditors which had been filed with the Court, May 3, 1916. The court fixed Sept. 5, for hearing the application, and has directed any person desiring to oppose the application to file particulars on or before Aug. 28.

Canadian Pacific Railway Honor Roll 25.

Adams, John	Waiter	Montreal	Died of wounds
Armstrong, Robert G.	Hostler	Coronation	Wounded
Bailey, Edgar E. E.	Apprentice instructor	Ogden	Wounded
Barlow, Thomas H.	Clerk	Winnipeg	Wounded
Beattie, Wilfred G.	Clerk	Montreal	Wounded
Bell, George E.	Loco. man	British Columbia Dist.	Killed in action
Brown, Joseph A.	Clerk	Winnipeg	Wounded
Buchanan, George	Loco. fireman	Hardisty	Wounded
Candy, Ernest J.	Loco. fireman	British Columbia Dist.	Presumed dead
Chambers, William L.	Clerk	Winnipeg	Killed in action
Chrisp, Alfred John	Cashier	New Westminster	Wounded
Clark, Samuel	Carpenter	West Toronto	Wounded
Coles, Jack McI.	Storekeeper	Swift Current	Wounded
Crosby, Thomas G.	Agent	Francis	Wounded
Currie, James	Truck repairer	Vancouver	Wounded
Ferguson, John	Loco. fireman	Fort William	Presumed dead
Hamilton, Robert	Laborer	Strathcona	Presumed dead
Harrison, Jonathan	Loco. fireman	Red Deer	Wounded
Hawkins, Kenneth B.	Loco. man	New Brunswick Dist.	Killed in action
Heaton, Philip H.	Clerk	Moose Jaw	Wounded
Hickey, George F.	Trainman	London	Wounded
Johnson, Reginald L.	Electrician	Revelstoke	Killed in action
Keech, Ernest F.	Hammer boy	West Toronto	Wounded
Keir, D. B.	Cook	Calgary	Wounded
Kemp, Maurice T.	Steward	Toronto	Shell shock
Latimer, Archie	Yardman	Moose Jaw	Killed in action
Loewen, John	Apprentice	Nelson	Killed in action
McHardy, Andrew	Loco. foreman	Neudorf	Wounded
McIntyre, Robert L.	Conductor	British Columbia Dist.	Wounded
MacLaren, David L.	Clerk	St. John, N.B.	Wounded
Malpass, Wilfred A.	Porter	Vancouver	Wounded
Marks, Frederick	Car repairer	West Toronto	Killed in action
Masson, Robert	Cashier	Wetaskiwin	Killed in action
Miller, Frederick	Foreman	Winnipeg	Wounded
Millican, William	Loco. fireman	Fort William	Killed in action
Moore, James	Waiter	B.C. Coast S.S. Service	Wounded
Morris, David	Clerk	Lethbridge	Wounded
O'Flaherty, Lawrence	Loco. fireman	Kenora	Died of wounds
Oliver, Frederick C.	Forester	Montreal	Gassed
Parry, John	Bridgeman	Winnipeg	Wounded
Phillips, John O.	Clerk	Calgary	Wounded
Rainy, George E.	Loco. fireman	Winnipeg	Killed in action
Reynolds, William	Waiter	Winnipeg	Wounded
Roy, Charles M.	Machinist	Winnipeg	Wounded
Scott, Henry L.	Assistant Foreman	Montreal	Wounded
Stewart, William D.	Carpenter	British Columbia Dist.	Wounded
Stingel, Charles E.	Wiper	Fort William	Killed in action
Tyrrell, Roy W.	Messenger	Brantford	Wounded
Wallis, Frederick	Helper	Winnipeg	Killed in action
Watts, Arthur S.	Wiper	Arcola	Wounded
White, William	Clerk	Montreal	Wounded
Wilson, Alexander C.	Brakeman	Moose Jaw	Presumed dead
Young, Charles	Helper	Winnipeg	Presumed dead
Young, James F.	Assistant Agent	Manitou	Wounded

Up to July 3 there were shown on honor lists: Killed, 433; wounded, 940. Total, 1,363.

Toronto, Hamilton and Buffalo Railway Co's Annual Report.

Following are extracts from the annual report for the calendar year 1916: The report covers the operation of mileage as follows: Main line, 79.88 miles; branches, 20.13 miles; lines operated under trackage rights, 4.36 miles; total road operated, 104.37 miles. The decrease of 2.14 miles in road operated, as compared with the previous year, is due to a reduction of 7.39 miles, caused by a reclassification of tracks, partly offset by the extension of the Dunnville Branch from Dunnville to Port Maitland, 5.25 miles.

	1916.	1915.
Rail operations		
Revenue	$1,870,236.68	$1,404,319.55
Expenses	1,144,868.67	899,636.37
Net revenue	$725,368.01	$504,683.18
Percentage of expenses to revenues	(61.22)	(64.06)
Railway tax accruals	$20,338.78	$12,497.23
Uncollectible railway revenues		1.20
	$20,338.78	$12,498.43
Railway operating income	$705,029.23	$492,184.75
Other income	87,849.05	624,278.67
Gross income	$792,878.28	$624,278.67
Deductions from gross income—		
Joint facility rent	$11,451.00	$8,774.40
Interest on funded debt.	181,144.44	171,200.00
Interest on unfunded debt	40,307.82	68,617.07
Interest on equipment trust notes	46,125.00	52,875.00
Total deductions from gross income	$279,028.26	$301,466.47
Net income	$513,028.26	$301,466.47
Dividends (two aggregating 2.25%)	101,531.25	
Surplus transferred to profit and loss	$412,318.77	$322,812.20
Amount to credit of profit and loss Dec. 31, 1915		$1,275,481.70
Add surplus for 1916		412,318.77
Add sundry adjustments (net)		138.81
		$1,687,939.28
Deduct discount, commission and expenses, Consolidated mortgage bonds of 1966, Series A	$204,627.54	
Deduct abandoned property	450.00	
		205,077.54
Balance to credit of profit and loss Dec. 31, 1916		$1,482,861.74

Freight revenue during the year was $1,239,261.87, an increase of $341,344.21, due to a greater volume of traffic handled, there having been a substantial tonnage increase in nearly all commodities. Passenger revenue was $422,460.14, an increase of $55,140.76, due to a general increase in traffic and to increased average distance each passenger was carried. Express revenue was $36,644.57, an increase of $8,191.89, due to a general increase in business. Switching revenue was $109,137.54, an increase of $28,373.71, and demurrage revenue was $32,518.50, an increase of $27,574.10, largely due to increased activity of industries at Hamilton and Welland. Dining and buffet revenue was $20,907.72, an increase of $6,015.77, due to increased passenger business. Operating revenues from all other sources decreased $633.31. Operating expenses were $1,144,868.67, an increase of $245,232.30, and were 61.22% of the operating revenues, which is 2.84% less than the operating ratio of the previous year. An increased expenditure on maintenance of way and structures was largely due to relaying more rail than in the previous year and to higher rates paid for labor. In order to handle the increasing tonnage it was found necessary to make large expenditures in maintaining and improving the power and freight train cars, notwithstanding the higher cost of labor. A number of old flat and box cars were retired, and three locomotives were replaced with power of improved type. The increase in transportation expenses is due to increased cost of labor, fuel and materials and also to the larger force made necessary in handling the greater volume of business. The increase in miscellaneous operation expenses is due to a general increase in business. The increase in general expenses is due to increased cost of supervision and miscellaneous expenditures. The decrease of $44,244.87 in other income is mainly attributable to the falling off in the credit balance for hire of equipment, on account of the greater number of foreign cars used.

On the extension of Dunnville Branch, from Dunnville to Port Maitland, 5.25 miles, $174,624.95 was spent. There were issued and sold, at 90% of par, $2,000,000 4½% consolidated 50-year gold bonds, series A, out of the $10,000,000 authorized. The proceeds were used to reimburse the treasury for expenditures on construction of a branch line, Smithville to Dunnville, 14.90 miles, and other additions and betterments and to provide for future corporate purposes.

The Toronto, Hamilton & Buffalo Navigation Co. was incorporated July 7, 1916, under Ohio State laws, with a capital stock of $400,000, all of which has been acquired and is held by the T.H. & B.R. Co. The navigation company operates a steel car ferry boat—Maitland No. 1—between Port Maitland, Ont., and Ashtabula, Ohio, approximately 91 miles, in connection with this company's line, which has, during the year, been extended from Dunnville to Port Maitland. The operation of this boat was commenced Oct. 20, 1916, and for the period ended Dec. 31 there was a resulting surplus of $6,333.63, the additional benefit of this company being increased earnings of approximately $44,000, thus justifying the wisdom of the directors in extending the road from Dunnville to Port Maitland, and establishing a ferry connection with the railways to the south of Lake Erie at Ashtabula. The assurance given by the Government that the dredging of Port Maitland harbor and the Grand River would be done to the end that a sufficient depth of water may be afforded for the handling of the largest vessels operating on Lake Erie, has been in considerable part fulfilled. During the past season about 800,000 yards of dredging has been done at the expense of the Government, and the material removed has in large part been deposited on the low lands owned by the company, fronting on the river, thereby greatly improving their value for industrial development. The dredging performed by the Government included the excavation for a turning basin opposite the car ferry slip, and the river has now a navigable depth for about two miles from Port Maitland, with a channel approximately 500 ft. wide. There is every reason to expect that dredging operations will be continued next spring and completed as nearly as is practicable, ultimately resulting in a navigable channel approximately 500 ft. wide, and having a minimum depth of 21 ft. for approximately 4 miles from the port. The plans contemplate dredging of another turning basin in the upper reaches of the river.

Fuel Consumption on Railways in 1915-16.

The consumption of fuel of all kinds by locomotives on Canadian railways increased from 5,608,954 tons in the year ended June 30, 1907, to 8,995,123 tons in the year ended June 30, 1916. The average cost per ton in the last statistical year was $3.11, against $3.02 for the immediate previous year. Following is the analysis of the figures:

Class of Locomotive.	Coal.		Wood.		Other Fuel.		Total.	Miles. Run.
	Anthracite	Bituminous.	Hard.	Soft.	Oil.	Charcoal		
Freight	2,666	5,090,339	1,716	59,532	28,097,737	9,272	5,273,546	66,491,134
Passenger	1,129	1,845,382	1,163	34,553	14,438,906	5,236	1,938,619	42,215,551
Mixed	1,050	413,648	131	5,906	906,513	480	421,425	7,610,281
Switching	.....	1,027,949	529	21,752	3,675,157	2,820	1,053,739	23,536,669
Special	55	265,237	98	4,431	1,845,617	484	307,794	5,062,313
Total	4,899	8,672,455	3,637	126,174	43,963,930	13,292	8,995,123	144,966,448

Reduction of Passenger Train Service in the United States.

In order to facilitate movements and release passenger train crews for other work, U.S. railways are making drastic reductions, compared to which those made in Canada early this year appear mild. The Pennsylvania, on its lines east of Pittsburg alone, has eliminated 102 trains, or more than double the number taken off the whole of the Canadian railways. This will cut down the passenger movement by an amount equivalent to 2,268,000 train miles a year, or over 6,500 train miles every week day. A number of parlor cars, restaurant cars and observation cars are being discontinued. The Boston & Maine has taken off 255 trains, or more than five times the number taken off in Canada, saving approximately 41,000 train miles a week. Strenuous efforts are being made to increase the carload and to impress on merchants the importance of rapid unloading, so that freight equipment may be kept busy to its utmost capacity, and terminals be kept clear. The U.S. railways realize that speed in freight movement is one of the greatest aids they can give to help to win the war, and, according to all reports, are achieving remarkable results.

Contractors' Suit.—A difference between James McDonald and Thomas McIlvenna, railway contractors, involving the question of a signature to a receipt for $1,000, was investigated before Judge Scott at Smiths Falls, Ont., July 10. McIlvenna, who had a subcontract for some C.P.R. work from McDonald, declared that his name had been forged on a receipt for $1,000 by McDonald. After a full investigation McDonald was acquitted of the charge.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

26210. June 11.—Authorizing G.T.R. to rebuild highway bridge carrying North Front St., Belleville, Ont., over its main tracks.

26211. June 11.—Authorizing G.T.R. to rebuild bridge 19, over Maitland River, near Palmerston, Ont.

26212. June 11.—Authorizing C.P.R. to build spur for M. J. O'Brien in Lot 17, Con. 10, Bagot Tp., Ont.

26213. June 12.—Extending the time within which Canadian Northern Ry. shall complete spur to serve Block B, Plan B, Prince Albert, Sask., authorized by order 24930, Apr. 28, 1916.

26214. June 12.—Authorizing C.P.R. to build at grade, an extension to passing siding across road allowance between Lots 24 and 25, Con. 8, Camden Tp., Ont.

26215. June 18.—Authorizing Vancouver, Victoria & Eastern Ry. & Nav. Co. (G.N.R.) to open for traffic its line from mileage 155.32 to 156.56 in British Columbia.

26216. June 18.—Ordering Canadian Northern Ry. to grade highway crossings near mileages 50.9 and 52.1, St. Clements municipality, Man., and authorizing highway crossings at 4 points; all to be completed by July 31.

26217. June 18.—Authorizing Vancouver Harbor Commissioners to join their tracks with industrial spur operated by British Columbia Electric Ry. as lessee of C.P.R., on south shore of False Creek, Vancouver, B.C., subject to city's consent.

26218. June 18.—Authorizing C.P.R. to build extension to passing siding at grade across road allowance between Lots 30 and 31, Con. 2, Pickering Tp., Ont.

26219. June 18.—Ordering G.T.R. to contribute one-fifth of watchmen's wages as appointed under order 4788, May 27, 1908, at Winchester Ave., Toronto.

26220. June 18.—Approving plan and profile showing work to be done on North Black Creek drain under G.T.R. between Gadshill and Brunner station, Ont.

26221. June 18.—Amending order 26179, June 5, re G.T.R. gates at Victoria St., Thamesville, Ont.

26222. June 18.—Ordering that wages of watchmen required under order 26183, June 5, at Church St., Weston, Ont., be paid equally by town of Weston, G.T.R. and C.P.R.

26223. June 18.—Authorizing Grenville, Harrington and Northern Ry. to build across C.P.R. at Grenville, Que., and to provide, maintain and operate half-interlocking plant there.

26224. June 18.—Approving location of C.P.R. A2 station at Riverton, Man.

26225. June 19.—Extending, for 30 days from date, time within which C.P.R. shall erect flag station at Grants Crossing, mileage 50.5, Waltham Branch, Que.

26226. June 19.—Authorizing C.P.R. to operate over crossing near Red Deer, Alta.; speed not to exceed 15 miles an hour.

26227. June 20.—Authorizing G.T.R. to rebuild bridge carrying highway between Sidney and Thurlow Tps., Ont., over its main line.

26228. June 20.—Authorizing G.T.R. to build spur for Thompson Macdonald Co., Cohourg, Ont.

26229. June 19.—Authorizing C.P.R. to extend bridge over Great Lakes Power Co.'s canal Sault Ste. Mnrie, Ont

26230. June 19.—Certifying that area of Grand Trunk Pacific Branch Lines Co.'s right of way in s.w. ¼ Sec. 29, Tp. 44, Range 22, west of 3rd Meridian, Sask., should read 7.48 acres instead of 7.47.

26231. June 21.—Approving proposed enw location of gates at Canadian Northern Ry. crossing of Gore St., Fort William, Ont.

26232. June 22.—Authorizing C.P.R. to open for traffic its Moose Jaw Northwesterly Branch, Sask., from mileage 50 to 64.5.

26233. June 23. Restraining C.P.R. from cancelling trains 27 and 28, between Sault Ste. Marie and Toronto, until further order.

26234. June 22.—Amending order 26190, June 7, re C.P.R. spur for James Richardson & Sons, at Port Arthur, Ont.

26235. June 22.—Ordering Great Northern Ry. to provide a certain train service between Oroville and Princeton, and express fruit service to Vancouver, B.C.

26236. June 22.—Approving G.T.R. plan showing stock pens at Brampton, Ont; work to be completed within thirty days.

26237. June 22.—Authorizing Canadian Northern Ontario Ry. to build across Boyce Ave., Montreal.

26238. June 23. Amending order 25889, Feb. 19, re G.T.R. crossing at Amigari, Ont.

26239. June 23. Extending to Aug. 1, 1918, time within which C.P.R. shall complete station at Trampling Lake, Sask.

26240. June 23.—Dismissing Canadian Copper Co.'s application for order disallowing Algoma Eastern Ry. Tariff C.R.C. 167, advancing rates on ore and rock, effective Feb. 5, 1917.

26241. June 23.—Authorizinz Canadian Northern Quebec Ry. to build spur across Prince Albert St., Montreal, for S. Simard, Tetreauville, Que.

26242. June 23.—Ordering Pere Marquette Ry. to build farm crossing opposite existing crossing over Michigan Central Rd., in Lot No. 1, east ½, Con. 8, Aldborough Tp., Ont.

26243. June 23.—Dismissing complaint of J. E. Lilly & Co., Dawson, Yukon, against abrogation by White Pass & Yukon Ry. of season release with respect to certain items of Northern Freight Classification 6, providing alternative ratings based on stipulated valuations; and against amended Rule 21, Item 1, of Supplement 2.

26244. June 25.—Approving C.P.R. plans of bridge at London St., Windsor, Ont., provided proper telltales be erected and maintained on each side of bridge; and rescinding order 25771, Dec. 28, 1916.

26245. June 25.—Approving Canadian Northern Ontario Ry. plan dated Toronto, June 13, 1917, showing location of cattle pass on Lot 92, Ste. Genevieve Parish, Que.

26246. June 25.—Ordering C.P.R. to appoint agent at Senate, Sask., from Sept. 1 to Dec. 1, in each year and to provide standard portable station there.

26247. June 25.—Authorizing C.P.R. to build spur for Canada West Electric, Ltd., Regina, Sask.

26248. June 25.—Relieving C.P.R. from providing further protection at second public crossing east of Galt yard, Ont.

26249. June 18.—Authorizing Village of Forres, Sask., to make highway over C.P.R. on n.w. ¼ Sec. 36, Tp. 12, Range 29, west of 3rd Meridian.

26250. June 20.—Rescinding order 22119, July 2, 1914, re expropriation of certain Standard Fuel Co.'s land at Toronto, by Toronto Terminals Ry.

26251. June 25.—Dismissing application of Price Bros. & Co., of Quebec, Que., for reduction in arbitrary of 5c per 100 lbs. over Grand Mere basis of rates on paper, in carloads, from Jonquiere, Que., on Canadian Northern Ry. to U. S. points and requiring C.N.R. to amend its tariff of rates C.R.C. no. E-775, as supplemented, to provide through rates from Jonquiere that shall not exceed through rates from Donnacona or Grand Mere by more than 5c per 100 lbs., and continue this basis as maximum until further order.

26252. June 22.—Ordering G.T.R. within 60 days to install automatic bell at crossing near Gowanstown station, Ont., 20% of cost to be paid out of railway grade crossing fund.

26253. June 22.—Ordering G.T.R. to move crossing between Lots 5 and 6, Wenceslas Parish, Que., to centre of Lot 6; to be completed within 30 days.

26254. June 27.—Authorizing Vancouver, Victoria & Eastern Ry. & Nav. Co. (G.N.R.) to build spur for Craig-Taylor Lumber Co., Otter, B.C.

26255. June 26.—Authorizing C.P.R. to build spur for Foundation Co., Ltd., Dorval, Que.

26256. June 26.—Relieving Grand Trunk Pacific Ry. from providing further protection at crossing near Biggar, Sask.

26257. June 26.—Authorizing Village of Beauport, Que., to make highway over Quebec Ry., Light, Heat & Power Co.'s tracks near Everell station.

26258. June 26.—Limiting speed of G.T.R. trains over Marker St., and along Clarence St., Brantford, Ont., to 8 miles an hour.

26259. June 26.—Authorizing C.P.R. to build spur for Kingston Smelting Co., Kingston, Ont.

26260. June 27.—Dismissing Hadley Lumber Co.'s complaint against rate on lumber from Thessalon to Chatham, Ont., compared with lumber rate from Thessalon, Ont., to Detroit, Mich.

26261. June 29.—Ordering that rates in item 18 of C.P.R. Tariff C.R.C. no. E-3287 be continued in effect pending judgment in application for general increase of 15% in freight rates between points in Canada

26262 June 28.—Approving Salisbury & Alhert Ry. Standard Freight Mileage Tariff, C.R.C. 5.

26263. June 29.—Relieving G.T.R. from providing further protection at crossing naer Richmond station, Que.

26264. June 29.—Ordering G.T.R. to install at crossing of Forks Road, Moulton Tp., Ont., 20% of cost to be paid out of railway grade crossing fund.

26265. June 29.—Ordering C.P.R. to stop train 35 at Blairton, Ont., for passengers from points east of Tweed to detrain, and to discharge express; and train 36, to allow passengers for points east of Tweed to entrain and to load express; stops to be governed by rule applied to flag stops.

26266. June 30.—Authorizing C.P.R. to open for traffic its Stirling East Branch from mileage 49.2 to 85.1; trains operated between mileage 59 and 84 limited to 25 miles an hour.

26267. July 3.—Amending order 26180, June 5, re C.P.R. station facilities at Upper Kent, N.B. N.B.

26268. June 30.—Authorizing C.P.R. to rebuild interlocking plant at crossing of G.T.R. near Komoka, Ont.

26269. June 30.—Extending for two months from date time within which Kettle Valley Ry. shall fence its right of way east of Glenfir, B.C., according to order 26129, May 21, 1917.

26270. June 29.—Authorizing Canadian Northern Ry. to build bridge across Park Foad and Moose Jaw Creek, second crossing, as revised, mileage 85.8, Moose Jaw, Sask.; and rescinding order 18003, Nov. 11, 1912, approving other plans.

26271 to 26275. June 29.—Approving Canadian Northern Ry. revised location at 5 points in Saskatchewan.

226276. June 29.—Amending order 20413, Sept. 24, 1913, re road revision to the north of C.P.R. in Scarboro Tp., Ont.

26277. July 3.—Dismissing application by Notre Dame Investment Co., Winnipeg, Man., for order directing parties interested in Canadian Northern Ry. spur between Market St. and James St., to pay their respective portions of cost of land, laying of tracks and rental, and for premises covered being vested in trustees on behalf of all owners so apying shares; or in alternative, that C.N.R. be instructed not to deliver cars to such as shall not meet demands.

26278. July 4.—Approving C.P.R. train service at Tompkins, Sask., effective June 24, and providing that trains 13 and 14 are withdrawn in the autumn, trains 3 and 4 to be made regular stops at Tompkins, instead of flag stops.

26279. July 3.—Authorizing Hart-Parr Co. to build farm crossing over C.P.R. at Saskatoon, Sask.

26280. June 28.—Authorizing Vancouver, Victoria & Eastern Ry. and Nav. Co. (G.N.R.) to break connection between spur built under order 18255, Nov. 29, 1912, and old main line, and to remove portion of latter and ordering that spur, shown in yellow on plan, be not removed for six months from date and until further order.

26281. July 4.—Ordering crossing of C.P.R. by St. Vincent de Paul Tramway, St. Vincent de Paul, Que., be protected by derails on tramway 50 ft. each side of C.P.R.; derails to be normally open, held open by spring and operated by penitentiary officials in charge of lorries; cost to be paid equally by Dominion Department of Justice and C.P.R.; and rescinding order 25598, Nov., 1916.

26282. July 3.—Authorizing C.P.R. to operate bridge 22.28, near Hainesville, N.B.

26283. July 3.—Authorizing McLaren Lumber Co., Blairmore, Alta., subject to terms of agreement, Nov. 27, 1916, to construct log flume under C.P.R. at bridge 95.6, Crowsnest Subdivision, B.C.

26284. July 4.—Authorizing G.T.R. to build sidings and spurs for British Forgings, Ltd., Toronto.

26285. July 4.—Authorizing Vancouver, Victoria & Eastern Ry. & Nav. Co. (G.N.R.) to build spur for St. Mungo Canning Co., near Townsend, B.C.

26286. July 4.—Amending Montreal & Southern Counties Ry. train schedule, effective May 6, 1917.

26287. July 3.—Authorizing Greater Winnipeg Water District Commission to carry its railway at grade across Canadian Northern Ry. Dundee Branch, in Lot 74, St. Boniface, Man.; applicant to insert diamond in C.N.R. track and crossing to be protected by half-interlocking plant; and cost to be paid by applicants.

26288, 26289. July 5.—Authorizing C.P.R. to use bridges 81.5 and 54.88, Algoma District, Ont.

26290. June 30.—Approving location of G.T.R. new station at Bronte, Ont.

26291. July 3.—Authorizing Greater Winnipeg Water District Commission to carry its railway across Grand Trunk Pacific Ry. at point shown on plan; crossing to be protected by interlocked home signals, set clear for G.T.P.R. and operated by applicants' trainmen; applicants to pay cost, maintaining and operating said signals.

26292. July 5.—Authorizing C.P.R. to build spur for Energite Explosives Co. in Lot 11, Con. 3, Horton Tp., Ont.

26293. July 6.—Ordering C.P.R. to erect fences along both sides of right of way from Lavant station, Ont., south to mileage 37, by Aug. 1,

26294. July 7.—Authorizing C.P.R. to build extension to passing siding at grade across road allowance between Lots 35 and 36, Con. IX, Gore Tp., Ont.

26295. July 7.—Authorizing C.P.R. to build second passing siding at grade across road allowance between Lots 8 and 9, Con. 1, Oshawa, Ont.

26296. July 6.—Extending for six months from date time within which C.P.R. shall complete spur across Hunter St., Peterborough, Ont., as authorized by order 25986, Mar. 31.

26297. July 6.—Approving location of Grand Trunk Pacific Branch Lines Co.'s station at Red Deer Hill, Sask.

26298. July 6.—Approving Canadian Northern Ry.'s new station and site at Fort William, Ont.

26299. July 6.—Authorizing Town of Aylmer, Que., to extend Borden Crescent across Hull Electric Co.'s tracks and C.P.R. to Lake St., farm crossing at Mountnin St. to be closed and Glenholm Ave. opened as shown on plan.

26300. June 30.—Ordering that gates required at crossing of Canadian Northern Ry. and C.P.R., at Bay Bridge Road, Belleville, Ont., be installed by Aug. 31.

26301. July 3.—Dismissing application of Town and Board of Trade of Carlyle, Sask., Wauchope Grain Growers' Association and Rural Municipality of Moose Mountain, Sask., for transfer track and interchange of freight between C.P.R. and Canadian Northern Ry.

26302. July 6.—Approving agreement between Bell Telephone Co. and Mond Nickel Co., Coniston, Ont., June 7.

26303. July 5.—Authorizing Hamilton St. Ry. to cross, at rail level, Hamilton Radial Electric Ry. spur on Burlington St., Hamilton, Ont.

26304. July 7.—Authorizing C.P.R. to build second passing siding at grade across road allowance between Lots 10 and 11, Con. B.F., Clarke Tp., Ont.

26305. July 10.—Ordering G.T.R., within 60 days, to install improved type of automatic bell at Riddell St., Woodstock, Ont., and maintain same; 20% of cost of installing bell to be paid out of railway grade crossing fund.

26306. July 10.—Dismissing C.P.R. application for order directing City of Lethbridge, Alta., to pay $465.61, unpaid balance of half cost of subway at Westminster Road, as per agreement, May 10, 1913, between C.P.R., Alberta Ry. & Irrigation Co. and City of Lethbridge, upon which order 20740, Oct. 28, 1913, was based.

26307. July 10.—Ordering C.P.R., within 60 days, to install improved type of automatic bell at highway east of Dragon station, Que., 20% of cost to be paid out of railway grade crossing fund.

26308. July 12.—Authorizing Bell Telephone Co. to lay, maintain and operate its telephone lines in underground conduits on certain streets in Hull, Que.

26309. July 12.—Dismissing Canadian Northern Ry. application to remove connection between C.P.R. and Winnipeg Joint Terminals line at Higgins Ave., Winnipeg.

26310. June 30.—Dismissing complaint of Western Canada Flour Mills Co., Winnipeg, against refusal of C.P.R. to furnish cars for shipments to Halifax, and against charge of $200 demurrage for delay to equipment.

26311. July 12.—Dismissing application of Minnitaki Farmers Club, Minnitaki, Man., for order directing C.P.R. to stop its no. 1 passenger train three times weekly at Minnitaki siding.

26312. July 12.—Dismissing application of Rural Municipality of Assiniboia, Man., for order compelling Canadian Northern Ry. to provide lane from Portage Ave. to property immediately to rear of station grounds at Westside, corner Estella St. Portage Ave., Westside, Man.

26313. July 10.—Authorizing G.T.R. to build spur for Adams Cellboard Co., Toronto.

26314. July 6.—Rescinding order 23314, Feb. 19, 1915, re Canadian Northern Ry. fences, gates and cattle guards between mileage 103½ and 105½ from Jellicoe, Ont.

26315. June 22.—Amending order 10457, Apr. 28, 1910, to provide that work on bridge built under this order be maintained and cost apportioned as follows: City of Lachine to maintain surface, approaches and sidewalks, remove snow and keep bridge lighted, cleaned and watered; G.T.R. to look after abutments, superstructure and guard fences; cost to be paid 62½% by G.T.R., 17½% by Montreal Park & Island Ry., 16% by City of Lachine, 4% by Town of St. Pierre, Que.

26316. July 12.—Amending order 26230, June 19, re Grand Trunk Pacific Branch Lines Co.'s right of way at certain point in Saskatchewan.

26317. July 12.—Authorizing Boston & Maine Rd. to remove speed limitation of 10 miles an hour on trains operating over Comstock bridge crossing.

26318. July 12.—Ordering C.P.R. forthwith to stop train 172 at Oakville to pick up passengers for Toronto; G.T.R. to stop train 106, due at Oakville at 9.47 a.m., for passengers for Toronto and points beyond.

26319. July 13.—Authorizing G.T.R. to connect tracks on its Districts 17 and 19 with lines constructed for Hydro Electric Power Commission of Ontario, on Lots 41, 42 and 90, Stamford Tp.

26320. July 14.—Authorizing C.P.R. to build passing track across road allowance at Grainer, Sask.

26321. July 13.—Authorizing C.P.R. to build spur for Canada Creoesoting Co., Trenton, Ont., to connect with industrial sidings now existing, and to extend bridge 0.8 on main line, spanning Ontario St., to provide for construction of spur.

General order 195. June 23.—Amending tariffs of the various railway companies re cartage charges.

General order 196. June 29.—Regulations respecting use of barbed wire by railways in municipalities where it is prohibited. This order is given in full on another page.

General order 197. July 8.—Rescinding general order 187, Apr. 12, 1917, and allowing rates named in tariffs C.R.C. 1 and 2, published by G. C. Ransom, agent, to become effective, excepting rates on sugar to Port Arthur, Fort William and Westfort for furtherance. And directing that present rail and water rates on sugar to Port Arthur, Fort William and Westfort for furtherance be continued in effect until further order.

Traffic Orders by Board of Railway Commissioners.

Paper Rates From Jonquiere.

26251. June 25.—Re application of Price Brothers Co., Quebec, for a reduction in the arbitrary of 5c per 100 lb. over and above the Grand Mere basis of rates on paper, in carloads, from Jonquiere, Que., on Canadian Northern Ry., to points in the United States. Upon hearing the complaint at Quebec, June 27, the complainants and the C.N.R. being represented at the hearing, and it appearing that the railway has published and filed a supplemental schedule to take effect July 1, the effect of which is to increase the rates from Jonquiere, as compared with those from Grand Mere, by approximately 15%, and upon the report and recommendation of the Chief Traffic Officer, it is ordered that the application be dismissed, and that the C.N.R. be required forthwith to amend its tariff of rates on paper commodities to points in the United States, C.R.C. no. E-775, as supplemented, so as to provide through rates from Jonquiere that shall not exceed the through rates from Donnacona or Grand Mere by more than 5c per 100 lb., and to continue this basis as the maximum until further order.

Lumber Rate to Chatham.

26260. June 27.—Re complaint of Hadley Lumber Co. against alleged excessive rate on lumber from Thessalon to Chatham, Ont., compared with rate from Thessalon to Detroit. Upon hearing the complaint at Chatham, May 4, in the presence of counsel for the complainant, City of Chatham, Chatham Board of Trade, and Canadian Pacific Ry., and upon the report of the Chief Traffic Officer, it is ordered that the complaint be dismissed.

Raw Sugar Rates from St. John.

26261. June 29.—Re application of Montreal Board of Trade for suspension of proposed increase in rate on imported raw sugar from St. John and West St. John, N.B., to Montreal. Upon reading the application, it is ordered that the proposed increase in rates on imported raw sugar from St. John and West St. John, by Supplement 2 to C.P.R. Tariff C.R.C. no. E-3287, to become effective July 1, be suspended; and it is further ordered that the rates contained in item 18 of the company's Tariff C.R.C. no. 8-3287, be continued in effect pending judgment in the application of the railway for a general increase of 15% in its freight rates between points in Canada.

Salisbury & Albert Ry. Tariff.

26262. Granting application of Salisbury & Albert Ry., under sec. 327 of the Railway Act, for approval of its Standard Freight Mileage Tariff, C.R.C. no. 5.

Freight Interchange at Carlyle.

26301. July 3.—The application of Town and Board of Trade of Carlyle, the Wauchope Grain Growers' Association, and the Rural Municipality of Moose Mountain, for a transfer track and interchange of freight traffic between the Canadian Pacific and Canadian Northern Railways at Carlyle, Sask. Upon hearing the application at Regina, June 21, the applicants and the railway companies being represented, it is ordered that the application be refused.

Western Canada Flour Mills Co.'s Complaint.

26310. June 30.—Re complaint of Western Canada Flour Mills Co., of Winnipeg, against refusal of C.P.R. to furnish cars for shipments to Halifax; and against the charge of $200 demurrage for delay to the said railway's equipment. Upon hearing the complaint at Winnipeg, June 22, in the presence of counsel for complainant and representatives of the C. P. R. and the Canadian Freight Association, it is ordered that the complaint be dismissed.

G. T. P. R. Overcharge on Wheat.

26328. July 17. Re complaint of Farmer's Club Grain Co., of Winnipeg, that a car load of tough wheat, G. T. Pacific, 312409, on account of the G. T. Pacific Ry.'s embargo at Fort William was shipped to Keewatin, for which movement local rates were charged to and beyond Winnipeg. It is declared that the excess charge on the shipment amounted to 2½% per 100 lb. and the G. T. Pacific Ry. is authorized to rebate to complainants the excess amount collected by it on the shipment.

Rail and Water Rates.

General order 197. July 6. Re complaints of Board of Trade of Vancouver, Edmonton, and Winnipeg, Saskatoon Branch of Retail Merchants' Association of Canada, Montreal Board of Trade, and Canadian Manufacturers' Association against the proposed increase in rail and water rates between eastern and western Canada. Upon the matter having been set down for hearing at Victoria, Vancouver, Nelson, Calgary, Edmonton, Saskatoon, Winnipeg, and Fort William; and upon hearing what was alleged by the representatives of the Associated Boards of Trade of Eastern British Columbia and the C.P.R., it is ordered that general order 187, April 12, 1917, be rescinded; and the rates named in tariffs C.R.C. 1 and 2, published by G. C. Ransom, Agent, be allowed to become effective, with the exception of the rates on sugar to Port Arthur, Fort William, and Westfort for furtherance. And it is further ordered that the present rail and water rates on sugar to Port Arthur, Fort William, and Westfort for furtherance be continued in effect until further order.

Placing of Safety Appliances on Trains.

The Board of Railway Commissioners passed general order 198, July 16, as follows: Re general order 128, July 20, 1914, and the application of the Canadian Pacific and Grand Trunk Railways for an extension of time until July 1, 1918, within which to make changes in respect of safety appliances on trains as required under said order. Upon hearing the application at Toronto, June 13, in the presence of counsel for the applicant companies, the Canadian Northern Ry., and representatives for the railway employes, the evidence offered, and upon the report and recommendation of the Board's Chief Operating Officer, it is ordered that railway companies be granted an extension of time until July 1, 1918, within which to make the changes required under general order 128, the railway companies to continue their present practice of filing with the board monthly reports of the progress made in complying with the requirements of the said order.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Cascade Scenic Ry. — In passing through the Dominion Parliament the bill incorporating a company with this title to build scenic railways in any part of Canada was amended by limiting the area of the company's operations to the Dominion Government parks in Alberta and British Columbia. The company's immediate object is to build a scenic railway up Cascade Mountain, Banff, Alta. (Mar., pg. 100.)

English Falls & Hudson Bay Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Brereton, Man., on the National Transcontinental Ry., to English River, at the Ontario-Manitoba boundary, thence northerly to the Hudson Bay, between the mouths of the Albany and Nelson Rivers. The company's office is to be in Toronto, its authorized capital is to be $1,000,000, and it may issue bonds for $30,000 a mile. The provisional directors are: J. G. G. Kerry, H. A. Stewart, K.C., H. A. Clark, E. L. Weatherhead, Toronto.

The Esquimalt & Nanaimo Ry.'s bridge across Victoria harbor was considerably damaged by a Dominion Government tug on June 29. Traffic was reopened over the bridge, July 9, after repairs had been made.

In connection with building a bridge at Johnson St., Victoria, which forms part of the Songhees Reserve development works, the company has submitted plans for a temporary bridge, pending the full development of plans for laying out the reserve by the railways and the city. The company already has a bridge at this point which must sooner or later be replaced. The city desires to have a traffic bridge, and proposes that a joint railway and traffic bridge be built. The British Columbia Minister of Railways favors this, but the railway company dissents. The matter has been under discussion for a long time but seems now to be in a fair way of settlement. (April, pg. 193.)

The Grand Trunk Pacific Ry. has notified the Calgary, Alta., City Council that it is agreeable to the building of a spur track to connect the main line with the city market, the company to provide the steel rails, angle irons, etc., the city to pay amortization charges, the chief of which will be on the ties. In a discussion at the city council, an opinion was expressed that the city wished to retain the right to take up the spur whenever desirable, and therefore should be sole owner. Commissioner Graves was directed to make a report. The estimated cost of the spur is $4,300.

The company has deposited with the Minister of Public Works at Ottawa, under the Navigable Waters Protection Act, plan of wharf and fish curing plant proposed to be erected in Prince Rupert harbor, B. C. (July, pg. 273.)

Grand Trunk Ry.—The Brantford, Ont., City Council has adopted a report of its committee on railways, which made four recommendations: (1) That the city waive insistence on the building by the G.T.R. of the Holmedale spur and the Eagle Place switches, and the maintenance of the Colborne St. station as a station and as a stop; (2) That the G.T.R. convey to the city the extension of Clarence St., 66 ft. wide, south through G.T.R. lands; (3) That the G.T.R. convey to the city property for the purpose of enabling the city to extend Northumberland St. westerly to the line of Clarence St.; (4) That the G.T.R. assume the total cost of the St. Paul Ave. subway as a roadway, 44 ft. wide, as directed to be constructed by the Board of Railway Commissioners. (July, pg. 273.)

Work is to be started at once on the erection of a brick station at St. Catharines, Ont. The building is to be built on a granite base. The company is erecting a similar building at Berlin, N.H., on the main line between Montreal and Portland, Me.

Great Northern Ry.—The Board of Railway Commissioners has authorized the opening for traffic of the line from a connection with the main line at Grand View cut to the station near Main St., Vancouver, mileage 155.32 to 156.56. This is the piece of line built to give connection with the new terminal station on False Creek flats, used jointly by the G.N.R. and the Northern Pacific Ry. (July, pg. 273.)

Hudson Bay Ry.—The House of Commons, on July 13, voted $3,000,000, on account of construction of this railway from Pas to Port Nelson, Man., and for terminals and elevators. The Minister said it is expected that the line will be completed to Port Nelson in November, but will not be operated this year. (July, pg. 268.)

Intercolonial Ry.—In respect of the present state of construction of the new deep water terminals at Halifax, N.S., the Minister of Railways said in the House of Commons recently: "To assist in handling the overseas shipment of stores and timber, special efforts were made to complete berths and immense temporary sheds at the new ocean terminals, Halifax. This was a big undertaking, but was satisfactorily completed by Nov. 15, 1916. When war broke out our yards could accommodate 1,844 cars in and around Halifax; we are now able to handle 3,748 cars, which is a striking indication of our overseas development at that point. The grading from Point Pleasant to Fairview has been practically completed. The substructure of the subway at Fairview has been completed and a temporary steel span erected. Two concrete highway arches, one at Mumford Road, and one at Quinpool Road, have been completed, and the foundations finished for Chebucto and Byers Roads and Prince Arthur St." The terminal works include the building of a double track line from Fairview to the terminals and the building of wharves with freight and passenger buildings thereon. These were fully described, with plans, in Canadian Railway and Marine World, Nov., 1914, pg. 496.

We are officially advised that the 10,000 tons of 85 lb. steel rails being rolled for the line by the Dominion Iron & Steel Co. will lay about 75 miles of track. These rails will be used on the main line and the released rails will be used for relaying branch lines, sidings and other appropriation work.

Tenders are under consideration for the erection of an extension to the freight shed accommodation at Halifax, N.S.

Michigan Central Rd.—We are officially advised with respect to a press report as to work being in progress on the rebuilding of the cantilever bridge across the Niagara River at Niagara Falls, Ont., that there is nothing further to be said than was said in February. At that time the Chief Engineer advised us that surveys and tests were being made, and certain preliminary work being done; that when all this was completed the company would be in a position to determine what really would be done at the bridge, either in the way of strengthening and enlarging the present bridge or of building an entirely new bridge. (July, pg. 273.)

Toronto, Hamilton & Buffalo Ry.—We are officially advised that the company has purchased some acreage at Bridgeburg, Ont., with the intention of utilizing it for a freight yard provided arrangements can be made with the Michigan Central Rd. for running rights between Welland and Bridgeburg. The proposed yard would hold about 2,000 cars. The plans have not been definitely settled, and no contract has yet been arranged with the M.C.R. (July, pg. 274.)

Mikado Locomotives for Grand Trunk Railway.

The 15 mikado locomotives which the G.T.R. is having built, 10 by Canadian Locomotive Co., Kingston, Ont., and 5 by American Locomotive Co., Schenectady, N.Y., are of the 2-8-2 type, G.T.R. class M, the numbers of those being built at Kingston being 485 to 494 and of those at Schenectady, 495 to 499.

The cylinders will be 27 in. diam. by 30 in. stroke, and the 8 driving wheels will be 63 in. diam. The extended wagon top type boiler will be 74 in. diam. at the front end and 83 in. diam. at the dome course, and the pressure will be 175 lb. a sq. in. There will be a 2-wheel truck at the front end, with 31 in. wheels, and a 2-wheel trailing truck at the back end, with 43 in. wheels. The weight on the driving wheels will be 205,000 lb., and the total weight of the engine in working order 276,000 lb. The driving wheel base will be 16 ft. 6 in., and the total engine wheel base 35 ft. 1 in. The tender wheel base will be 20 ft. 10 in., and coupled with the engine the total wheel base will be 67 ft. 6¾ in., and the total length of engine and tender over all 78 ft. 11½ in. The tractive power will be 51,637 lb., the total heating surface 3,648 sq. ft., and the grate area 56.5 sq. ft. The tender tank, of water bottom type, will carry 9,000 gal. of water and 12 tons of coal. The trucks will be fitted with equalizers and semi-elliptical springs, friction draft rigging being fitted at the back end and radial buffer at the front.

The engines will be fitted with Schmidt superheaters, valve gear, reverse gear, Franklin grate shakers, Detroit 5 feed lubricators, with special lubricator for 8½ in. cross compound Westinghouse air pump, adjustable driving box wedges, metallic packing, Gold steam heat apparatus, sanders, Buffalo brake beams on tender trucks, electric headlights and fixtures. The cylinder and piston valve bushings will be made from Hunt Spiller gun iron.

Carmen's Wages on G.T.R.—On the application of G.T.R. carmen, a conciliation board is being appointed to enquire into the men's claims regarding wages. F. H. McGuigan, formerly Fourth Vice President, G.T.R., has been nominated on the company's behalf, and C. Rodier, K.C., Montreal, will act for the employes.

Canadian Government Railways' Construction and Betterments.

The House of Commons passed the following votes recently: C.G.R. construction and betterments, $6,500,000; Dartmouth to Deans branch line, $65,000; to provide car ferry, construction, terminals, etc., $310,000.

The Minister of Railways, explaining the votes, stated that the $6,500,000 is on capital account and is not required to complete any line, but is for general betterments, distributed as follows:

Intercolonial Ry.—Buildings, $571,000; roadbed and track, $333,000; bridges, $365,200; miscellaneous, which includes $3,000,000 for Halifax terminals, $4,158,000; total, $5,426,200.

Prince Edward Island Ry.—Roadbed and track, $7,600; bridges, $900; miscellaneous, $2,200; total, $10,700.

New Brunswick & Prince Edward Island Ry—Buildings, $14,500; roadbed and track, $64,000; bridges, $55,600; miscellaneous, $4,000; total, $138,100.

International Ry of N.B.—Roadbed and track, $5,390; bridges, $1,010; total, $6,400.

National Transcontinental Ry.—Buildings, $118,900; roadbed and track, $151,100; bridges, $74,000; miscellaneous, $22,700; Winnipeg elevator, $425,000; total, $791,700.

Lake Superior Branch — Buildings. $3,800; roadbed and track, $15,400; bridges, $87,700; miscellaneous, $20,000; total, $126,900.

The Minister said in reference to the N.B. & P.E.I.R. that it is hoped to get the betterments completed this year and to relay line with track taken up from the Intercolonial main line. The government is getting 12,000 tons of rails rolled at Sydney to be laid on the main line to release lighter weight rails for branches, etc. It is desired to get this particular piece of line relaid so that when the Prince Edward Island car ferry terminals are completed the line will be in a position to handle the traffic.

The $3,000,000 proposed to be expended on the ocean terminals at Halifax will complete the unit at present in hand; the station and train shed to be built in the future is estimated to cost $1,000,000. The total cost of the Halifax ocean terminal work to the date of the discussion was $3,400,000.

Asked as to what was being done to avoid the gradient between Sackville and Dorchester, the Minister said: "We have spent considerable money in surveying to get the best route possible, and had it not been for the war I have no doubt we would have made the change before this. We will have to build nearly 100 miles to get around the gradient spoken of. Last winter the line from Truro to Halifax was exceedingly busy. We would be very glad indeed if we could go on with the work, but it is impossible now. I think we have a gradient there that will give satisfaction; it is 0.4% both ways."

In regard to the Intercolonial Ry. Dartmouth to Deans Branch, the Minister stated the amount asked is for the completion of the line. The line had not been in operation sufficiently long to have a full year's revenue reported on, but it is doing very well, better than was anticipated, and is proving a valuable feeder to the I.R.C. A telegraph line has been installed.

Referring to the Prince Edward Island car ferry vote, the Minister stated that it is hoped to take over for operation the car ferry terminals on the island and at Cape Tormentine at an early date. It had not been decided whether, when the car ferry was in operation, the steamship service between Charlottetown and Pictou, N.S., and between Summerside and Point du Chene, N.B., would be continued.

Railway Rolling Stock Notes.

The G.T.R. has ordered 1,000 box cars from American Car & Foundry Co., and 10 snow ploughs from Russell Snow Plough Co.

The C.P.R. has received 116 freight refrigerator cars and 2 steel mail cars, 60 ft. long, from its Angus shops, and 6 vans from its Winnipeg shops.

The British Government is reported to have ordered 100 consolidation freight locomotives from Baldwin Locomotive Works, at a cost of about $4,500,000, for delivery within six months.

Canadian Government Railways have ordered 2,000 box cars, 40 tons capacity, from Canadian Car and Foundry Co.; and 1,000 box cars, 40 tons capacity, from National Steel Car Co.

The C.P.R. has ordered 1,365 composite coal cars of 40 tons capacity, and 10 275% decapod locomotives from its Angus shops. The company is also having converted at its Angus shops, 600 stone cars and 1,161 steel side dump ballast cars, in order to handle the coal situation.

The G.T.R. was stated in our last issue to have ordered 10 locomotives from Canadian Locomotive Co., Kingston, Ont., and 5 locomotives from American Locomotive Co., Schenectady, N.Y. These orders were placed in March and mentioned in our April issue, with details, and were advised a second time in error.

The Russian Government is reported to have ordered 250 decapod locomotives from American Locomotive Co. and 250 from Baldwin Locomotive Works, for delivery early in 1918. The cost is stated to be about $28,000,000, and it is said that payment is practically guaranteed by the U. S. Government.

The Eastern Car Co. has delivered a further 300 cars to the Paris and Orleans Ry., France, making a total of 1,650 cars delivered to July 18, and leaving 350 to complete the order. It has also delivered to Canadian Government Railways 154 steel frame box cars, 50 tons capacity, making a total of 372 cars delivered to July 18, out of an order for 500.

Following are chief details of the 1,000 steel frame box cars, 40 tons capacity, which Canadian Government Railways have ordered from the National Steel Car Co.:

Length over striking plates	38 ft. 1¼ in.
Length inside	36 ft.
Centre to centre of truck	26 ft. 10 in.
Width, extreme	10 ft. 0½ in.
Width, inside	8 ft. 6½ in.
Extreme height from rail	13 ft. 10 in.
Height, inside	8 ft. 5¼ in.
Truck wheel base	5 ft. 4 in.
Journals	5 x 9 in.
Wheels	33 in. diam.
Draft gear	Twin spring
Couplers and bolsters	Simplex
Air brakes	Westinghouse
Journal boxes	McCord malleable iron
Truck springs	M.C.B. class B
Brake beams	M.C.B. no. 2

Canadian Government Railways have received 138 box cars, 50 tons capacity, from Eastern Car Co.; 30 box cars, 30 tons capacity, from Canadian Car & Foundry Co.; and the following second hand equipment from General Equipment Co.: 4 locomotives, 36 coal cars, 40 tons capacity; 57 of 35 tons capacity; 138 of 30 tons capacity, and 10 box cars of 30 tons capacity.

The Toronto, Hamilton & Buffalo Ry. has ordered 6 six wheel switching locomotives from Canadian Locomotive Co., of which the following are the chief details:

Weight in working order on drivers	166,000 lb.
Wheel base	11½ ft.
Wheel base, engine and tender	45 ft. 4½ in.
Heating surface, firebox and arch tubes, 142 sq. ft.	
Heating surface, tubes	1,879 sq. ft.
Heating surface, total	2,021 sq. ft.
Driving wheels, diam.	51 in.
Driving wheel centres	Cast steel
Driving journals	9 x 12 in.
Cylinders, diam. and stroke	21 x 28 in.
Boiler, type	Radial stayed
Boiler pressure	180 lb.
Tubes, no. and diam.	165-2 in.; 22-5½ in.
Tubes, length	16 ft.
Brakes	Westinghouse American
Packing	King metallic
Superheaters, Locomotive Superheater Co.'s type A.	
Fire door	Franklin butterfly type
Brick arch	American Arch Co
Valve gear	Walschaerts
Reverse gear	Casey-Cavin power type
Weight of tender, loaded	110,000 lb.
Water capacity	5,500 gal.
Coal capacity	8 tons
Tank, type	U shape, steel coal gate
Truck, type	Arch bar
Wheels	Solid steel, 33 in. diam.
Journals	5 x 9 in.
Brake beams	Buffalo Brake Beam Co.
Axle boxes	McCord

Freight Rates on Grain and Grain Products East of Fort William.

The Assistant Chief Railway Commissioner, D'Arcy Scott, gave judgment, July 17, on the application of the railway companies for a general increase in rates on grain and grain products east of Fort William, stating that the board was prepared to authorize an increase of 1c in both the lake and rail, and the all rail rates, applied for in the eastern rates case, but that it saw no justification for placing the heavy burden of a permanently added 2c to the lake and rail rate for the purpose of preventing the Canadian Northern from cutting the all rail rate.

He also said: "With the allowance of increased rates in the eastern rates case, and the increase in rates from the head of the lakes just referred to, it naturally follows that certain increases in the rates on grain and grain products in the territory east of the lakes should be allowed. The system of building up through rates to points in Quebec and the Maritime Provinces, by adding to the rates to Montreal certain fixed special proportional rates, or arbitraries, while it has been criticized, is nevertheless beneficial as a means to maintain the fixed relationship in certain rates. It is not proposed to increase these arbitraries to points in the Province of Quebec, west of and including Levis and Megantic."

The judgment provided for certain other advances, and also certain reductions, and authorized the railway to issue new tariffs, to become effective Sept. 1, order 26172, of June 5, remaining effective in the meantime.

The Roadmasters and Maintenance of Way Association annual convention which was to have been held at Chicago, Sept. 18 to 21, will be reduced to two days, all of which will be devoted to routine business, discussion of reports, election of officers, etc. All entertainments, excursions, etc., will be eliminated.

Michigan Central Rd.—There has been deposited with the Secretary of State at Ottawa, a lease dated June 1, 1917, made between the Guaranty Trusts Co., of New York, as trustee, and the Michigan Central Rd., relating to the Michigan Central Rd. equipment trusts of 1917.

Lifting of Canadian Northern and Grand Trunk Pacific Railway Rails, for Shipment to France.

Canadian Railway and Marine World for June contained particulars of about 300 miles of steel rails, with the necessary turnouts, angle bars, bolts, spikes, and other track material, having been taken up from the National Transcontinental Ry., between Moncton, N.B., and Winnipeg, and shipped to France, for military railways. Of this, 98.2 miles were taken up from the N.T.R., between Moncton and Diamond Jct., 11.8 miles east of Levis, Que., and 206.6 miles were taken up between Quebec and Winnipeg. These rails, etc., were not taken out of the main line, but out of sidings and divisional yards. About two-thirds of the rails lifted have been replaced by lighter rails. The balance have not been replaced, as the sidings and divisional yards were built to take care of a very large business anticipated in the future, and will not be required for some years to come.

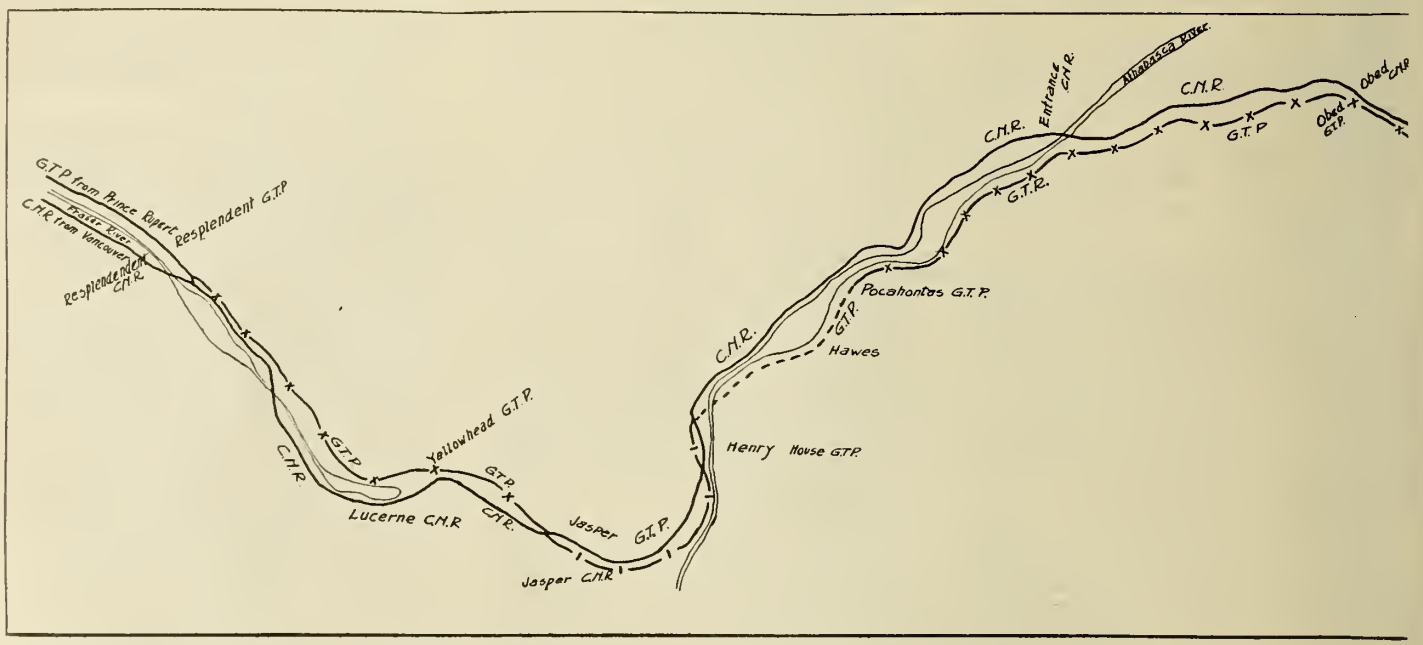
It was also mentioned that a request had been received by the Dominion Government for another 300 miles of rails, etc., which would be taken up from the Grand Trunk Pacific, west of Edmonton, where it closely parallels the Canadian Northern, and that Grand Trunk Pacific trains would be run over Canadian Northern tracks between those points. Subsequently it developed that some places, particularly Edson, Alta., would be seriously affected by removing the G.T.P. track, and the plan was changed so as to take up some G.T.P.R. and some C.N.R. track.

The track that has been, or is being taken up, is situated between Imrie, on the east, and about Resplendent, on the west. Imrie, on the G.T.P.R., is 865.6 miles west of Winnipeg, and Lobstick, the corresponding point on the C.N.R., is 906.4 miles west of Winnipeg. Resplendent, on the G.T.P.R., is 1,073 miles west of Winnipeg, and on the Canadian Northern, 1,117 miles west of Winnipeg. The accompanying map shows the main through line to be retained and to be operated by both the C.N.R. and the G.T.P.R.; the C.N.R. and the G.T.P.R. lines to be abandoned, and the G.T.P.R. line to be relaid with light steel.

Starting from the east at Imrie, G.T.P.R., rails are taken up to Chip Lake, 14.4 miles, and both G.T.P.R. and C.N.R. trains run over C.N.R. tracks between those points, a connection having been built from the G.T.P.R. to the C.N.R. at Lobstick. From Chip Lake to Dandurand, 56.9 miles, the G.T.P.R. is used by both companies, the C.N.R. being abandoned for 59.8 miles between those points. From Dandurand the C.N.R. track is utilized for both companies for about 80 miles, to near Henry House, the G.T.P.R. being abandoned, except from Pocahontas west to the new junction point with the C.N.R. The G.T.P.R. line between Pocahontas and the new junction point has been relaid with light rails, so as to maintain shipping facilities for the Jasper Park Coal Co.'s line at Pocahontas. From the point above mentioned, near Henry House, G.T.P.R. track is used to Geikie, about 25 miles, the C.N.R. being abandoned, and from Geikie, the C.N.R. is used for about 35 miles to about 2 miles east of Resplendent, from which point both companies continue to use their own lines, the C.N.R. to Vancouver, and the G.T.P.R. to Prince Rupert. On any part of the C.N.R. lines abandoned rails are removed to the G.T.P.R. roadbed, to release G.T.P.R. rails, the reason being that the specifications in this requisition for 300 miles of track are for rails and accessories precisely the same as were supplied under the first requisition, which was filled from the National Transcontinental Ry. The C.N.R. and C.P.R. rails, while of the same weight and section, have different borings, so that it is necessary to ship G.T.P.R. rails only.

By the use of the composite through line above outlined, all industries are taken care of, without having their siding accommodation lengthened, except for very short distances, with one exception, viz., the Jasper Park Coal Co., at Pocahontas, mile 1,001. In this case light rails have been laid on the G.T.P.R. roadbed, to connect with the composite line at mile 1,016. This means a temporary line of 15 miles, and, as practically all shipments of coal from this mine are eastward, it means that it must be hauled back from mile 1,016, in other words, an extra haul of 30 miles, which in one sense is considerable, but in another sense, when it is considered that most of the coal has to be hauled hundreds of miles, it is inconsiderable. It is hoped to overcome this difficulty by running a short trestle across Brule Lake, at about mile 1,001, to make a connection with the composite line, which is on the other side of the lake, but it will not be possible to give this service until the rails are lifted and the work of getting the new line operated is completed. The Jasper Park Coal Co. will therefore have some temporary inconvenience in the extra haul.

The arrangements for lifting track, and other matters connected therewith, are in special charge of G. A. Bell, C.M.G., Assistant to Minister of Railways, and Financial Comptroller of the Railways Department, and Alex Ferguson, Inspecting Engineer, the latter having been on the ground in the west for some time.



Track Lifting for Overseas Shipment, Canadian Northern and Grand Trunk Pacific Railways, Imrie, Alta., to Resplendent, B.C.

Quebec and Saguenay Ry. Purchase.—It was reported in Ottawa recently, that a bill is to be introduced by the government fixing a specific price for the purchase of the Q. and S. Ry. An act was passed last session, under which the government took over the line, the value of the property to be fixed by the Court of Exchequer. The Exchequer Court judge made an investigation and asked for instructions as to allowing interest. Nothing further was done and it is now reported that the Government will, in the new bill, fix a definite price approximating, the report says, $4,200,000.

The C.P.R. Stirling subdivision has been extended to Manyberries, Alta., by the opening up of the new section of the Weyburn-Lethbridge extension from Pakowki, 13.2 miles.

Canadian Northern Railway Construction, Betterments, Etc.

Western District.—The Minister of the Interior has been authorized by Order in Council to grant to the C. N. R. a license of occupation of a portion of the bed of Red Deer River, in the S.W. ¼ Sec. 28, Tp. 28, Range 19, west of the 4th Meridian, Alta., as a site for a railway bridge on the Saskatoon-Calgary line.

Pacific District.—it is reported that the B.C. Government has called upon the company to proceed at once with the completion of all the lines on the mainland for which provincially guaranteed bonds have been issued. This covers the branch line from near Kamloops into the Okanagan Valley, for which surveys have been made, and the terminals at False Creek, Vancouver, where considerable work is in progress. The company's traffic at present goes into Vancouver over the Great Northern Ry., the plans for its own line from New Westminster not yet having been definitely settled.

We are officially advised, in regard to the company's car shops, at Port Mann, that W. E. Suter, of Winnipeg, is in charge of filling up the plant, which will be operated by electricity generated at the company's own plant, and that no decision has been reached as to the date for the plant being started in operation.

Vancouver Terminals.—Rapid progress is reported on the work of erecting the passenger station at False Creek, Vancouver. All the foundation work has been finished, the form work for the concrete for the second story is practically in place and the concrete men are at work on that floor. Once the concrete is set for that floor, good progress can be made towards finishing the building, as there is a vast quantity of cut stone, tiling and terra cotta on the ground all ready for the completion of the structure. Meanwhile, work on the offices and freight sheds located a short distance south of the station has also been rushed and these are practically finished as far as the acting details to the offices and freight sheds are being attended to by the various subcontractors. There is a considerable amount of filling in to be done yet over the whole area of the C.N.R. grant at False Creek, but that will be attended to after the completion of the sea-wall just west of the Main St. bridge. The filling in will then extend right out to the seawall and the Main St. bascule bridge will be unnecessary when that is done. But it may be some time next summer before that is accomplished, although it is expected to have the station and a good deal of the other terminal work done this year.

Vancouver Island.—The British Columbia Government has notified the company that it must proceed at once with the uncompleted portion of its undertakings. The time fixed by the late government for the completion of the lines on the Island was July 1, and this company asked for a further extension. There are funds arising out of the proceeds of the sale of provincially guaranteed bonds available for this work, which includes the completion of the line from Patricia Bay to Victoria the line from Victoria to Barkley Sound, and the laying out of terminals in Victoria.

The Patricia Bay-Victoria line is practically completed, and the finishing up work is in progress. A station 40 x 25 ft. is being erected at Cordova Bay.

Some rails have been laid on the line to Barkley Sound, but generally work is at a standstill on it, owing to shortage of rails.

It is reported that the plans for the terminals in Victoria have not been submitted to the B.C. Government for approval. (July, pg. 274.)

Railway Lands Patented.—Letters patent were issued during June, respecting Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres.
Calgary & Edmonton Ry.	11,286.00
Canadian Northern Ry.	3,520.00
Canadian Pacific Ry., grants	6.47
Canadian Pacific Ry., roadbed and station grounds	12.49
Canadian Northern Western Ry.	1.72
Edmonton, Dunvegan & British Columbia Ry	336.58
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.	800.00
Total	15,963.26

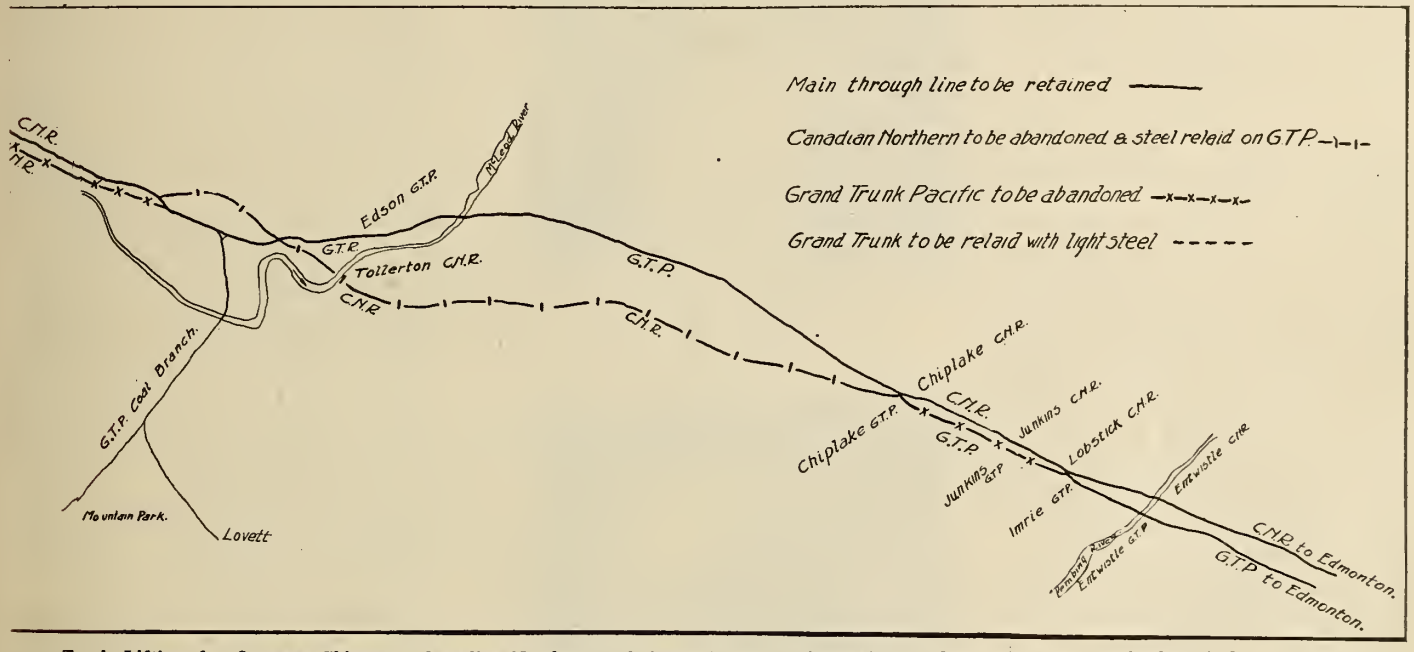
D. O. Lesperance, Chairman, Quebec Harbor Board, has been appointed a senator.

Canadian Pacific Railway Construction, Betterments, Etc.

Ontario District.—The C.P.R. has moved the old Lambton station, which about three years ago was moved from its original site, to a new one, up to the golf club grounds, where certain trains have been stopping for some years past. On the site and grounds adjoining the old station, sidings have been laid. Other sidings, principally for coal traffic purposes are necessary and the company has applied to the York Tp. Council and to the Board of Railway Commissioners for approval of the plans. The work will necessitate the closing up of a street, and the strengthening of the walls of a subway. The company proposes to provide a new street 66 ft. wide, but the township council is asking for one 80 ft. wide. The matter came before the Board July 17. Work in connection with the laying of the new sidings is in progress.

Saskatchewan District.—The Board of Railway Commissioners has authorized the opening for traffic of the Moose Jaw south westerly branch, from Vantage to Assiniboia, Sask., mileage 50 to 64.5. The extension was actually opened for traffic June 18, but regular train service was not placed in operation until June 24.

Alberta District.—The distance between Weyburn and Lethbridge, when the new line is completed, will be to 55.8 miles. This line will connect with the line into Lethbridge at Sterling, and the only section now to be built is that between Altawan, at the Saskatchewan-Alberta boundary, and Manyberries, Alta., 37.9 miles. The construction of this section is likely to be undertaken from the Manyberries end. (July, pg. 270.)



Track Lifting for Overseas Shipment, Canadian Northern and Grand Trunk Pacific Railways, Imrie, Alta., to Resplendent, B.C. (See pg. 308.)

Intercolonial Railway Coal Rates.—It was announced recently that a general increase in freight rates on coal, from Nova Scotia and New Brunswick mines, had been put into effect. We were officially advised July 23 that it had been considered advisable to modify these rates for the time being, and that the rates that would be adopted eventually had not then been decided on.

Fuel Economy as Related to its Use in Steam Boilers and Locomotives.

By S. H. Pudney, Fuel Inspector, Eastern Lines, Canadian Pacific Railway.

Fuel economy is a subject that covers such a wide scope for study and investigation that it would be practically impossible to try and treat it with all the consideration that is necessary in a short paper, therefore, I will confine my present remarks to certain lines that will include the items of the heading, and will continue the subject until it has been shown how economy of fuel may be brought about. I have known of efforts being instituted for the purpose of working on the lines of better economy of fuel, but invariably they end in not much being accomplished, as they offer such a wide field that the question usually asked is, where shall we start? or in what way shall we follow up this matter? Specifically speaking, the subject of fuel economy starts with the purchasing of the coal, and continues with the shipping, handling, storing, picking up again from such storage, and the placing into the boiler houses and so on until it is placed in the locomotive firebox or the stationary boiler furnace. In most cases great care is taken to purchase the class of coal suitable for the purpose for which it is intended to use it, but there is not as much care taken in the use of it as might be. This is no worse today than for years gone by, but the science of fuel and its combustion, with a view of getting the greatest efficiency from its use, is not studied as it should be. There is no doubt that this has been brought about by the fact that so many have talked on this subject, who knew very little more than the names of the elements that enter into the process of combustion. This has got on people's nerves to such an extent that, as I was once told, the subject had become worn threadbare. Under the stress of circumstances due to this world wide war, it has been necessary for a great many people, and institutions, and even governments, to make even threadbare articles over again and bring to life subjects that were allowed to lie dormant for years in order to conserve the resources at hand. Therefore, I propose to try and gather up some of the loose threads of the subject of fuel economy and the combustion of fuel, and if possible produce something that will not only be interesting, but will stand the test of all who care to go into the matter thoroughly. I feel quite sure that the facts, as brought out in this paper, will prove of value and the suggestions worth while if tried in practice.

There never was, nor is there likely to be a time in the world's history, and to bring it nearer home to us, in the history of this country, when the economy of fuel needed to be practised, and the consequent saving, not only of fuel, but of money, which would be brought about by it, than at present. Through lack of transportation facilities and labor difficulties, there has occurred such a shortage of fuel of all kinds that there is a certain amount of strain on the nerves of all users or consumers, either great or small, such as we have not before seen in this country. The cost of fuel, as laid down for use, has enormously increased, and the conditions that have arisen have caused the more thoughtful and prominent men to seriously consider the possible reduction of our fuel supply in years to come, probably not in our time, but in years after which may then be due to a reduction of our fuel areas. This would mean a permanent shortage and in consequence of this the conservation of the natural resources of the country is being seriously considered. The United States Government has, through its Bureau of Mines, and also in various universities, been making special tests with the view of increasing the efficiency of the heating value of the fuel as used, and has proved that a tremendous increment to the mechanical power evolved through the use of coal can be obtained, which will bring the heating value of coal as used, very much nearer to the initial heating value of the coal as purchased and used under the existing everyday conditions. In the early part of the last decade, and covering a period of several years, the U.S. Government made tests at St. Louis of coal from nearly all the eastern seams, and obtained some interesting data. To my mind the most important being the tests that were made with the producer gas plant, the idea being to gasify the coal and use the gas as a motive medium through the gas engine, instead of using the coal to produce steam as the motive medium with the steam engine, and it was found that a 1 h.p. hour could be obtained from the use of from 1 to 1½ lb. of coal, while with the production of steam it took from 3 to 5 lb. of coal to produce a h.p.h. This then brought out the fact that in stationary plants two-thirds of the coal could be saved, and there is no doubt that better results could be obtained where it is possible to use the hot water that passes through the cooling jacket, say for the washing out of boilers, heating shops and offices, one of the important features being that the very lowest grade of coal could be used in this manner. Some coal showing an analysis of 45% ash was used to good account. And most important of all is the fact that this method of using coal is absolutely smokeless.

Before considering the economy of fuel it will be necessary to make ourselves certain that there is now a waste of fuel. Some persons imagine not. So it will be quite in keeping to consider at this stage the subject and extent of our losses in ordinary practice. To do this it will be necessary to quote authorities who have made numerous tests with all classes of steam boilers in an independent manner, that is to say, they were conducted in some cases under the direct supervision of the U.S. Government officials, the only object being to get correct data in regard to the extent of losses that are sustained in the use of coal in the ordinary everyday practice of steam boilers. In the U.S. Bureau of Mines bulletin 1, "The volatile matter of coal," by H. C. Porter and F. K. Ovitz, it is stated that visible smoke consists of solid particles of carbon and tar vapors, or, in other words, the heavy hydro carbon gaseous portions of the coal, both resulting from incomplete combustion of the volatile products of the coal, and that the most important unaccounted for losses shown in various tests are likely to be found in the gases that are allowed to escape unburned. The bulletin quotes E. J. Constam and P. Schlafer, who show an efficiency loss of 17.2%, and this was due to the formation of CO 3.5 %, and hydrogen 1.5%. Neither of these gases is visible to the eye and escape unnoticed in practice. They also say that the reduction of boiler efficiency under these conditions may be due to several causes, chief among them being loss of sensible heat and loss of combustible gases through the somestack. In view of the high rate of firing, and the small combustion space of the locomotive, the bearing of the nature of the volatile products of the fuel and the incompleteness of their combustion may be readily seen.

In U.S. Geological Survey bulletin 402, "The utilization of coal in locomotive practice," by Prof. W. F. M. Goss, there is shown in the column for unaccounted for losses, 10.59%, and in the CO. loss, 3.60%, this all due to imperfect combustion. Not one atom of these losses would have occurred if the essential points governing the fundamental laws of combustion had been carried out. These losses occurred in tests where the firing was being done under special supervision, and there can be no doubt that much greater losses occur.

The U.S. Bureau of Mines technical paper 137, "Combustion in the fuel bed of hand fired furnaces," gives some very interesting and important data regarding the combustion process of coal in the fuel bed, chief amongst them being an analysis of gases taken at the surface of the fuel bed, which show 32% of combustible gases. The most instructive point in regard to the use of coal in locomotives is that they found that the composition of the gases was not changed by increasing the air supply; the rate of coal consumption was increased, but the amount of air per pound of coal consumed remained in the same ratio. This shows us that by decreasing the exhaust we may burn more fuel without getting more efficient results from the coal that is being burned. By combustible gases the authors mean not only the volatile gases but the CO that is generated during the process. Some steps ought certainly to be taken to prevent this gas going away as lost fuel, and in the next article this will be followed up to show how some economy can be effected in this line.

Navigation Collision Suit,—Litigation between the C.P.R., as owning the s.s. Princess Victoria, and the Pacific Alaska Steamship Co., as owning the s.s. Admiral Sampson, in connection with the collision between the two vessels, in which the s.s. Admiral Sampson was sunk near Point No Point, Aug. 26, 1914, has been concluded by a judgment of a U. S. Court made recently. A court had previously awarded $16,065 to the C.P.R., and $17,509.08 to the Pacific Alaska Navigation Co., and each of the parties petitioned for limitation of liability. The C.P.R. claim was allowed for $33,081.77, less $18,767, and less $249.77. The charterer of the s.s. Admiral Sampson showed a loss of $19,488.06, which was allowed, less $107.50 charter hire, $400 for fuel oil and $1,772.48 rentals, etc., leaving a net loss of $17,509.08. The judgment declared that interest should be added at the legal rate from the date when the voyage would have been completed, that is 21 days after Aug. 26, 1914, and included in the decree for half of the difference between the amounts of the litigants' respective losses.

The Eastern Car Co., to June 16, had shipped 1,650 box cars to the Paris & Orleans Ry. of France.

Mainly About Railway People Throughout Canada.

E. W. Kelly, station agent, C.P.R., Summerland, B.C., was drowned there, July 10, through a canoe capsizing.

Major G. W. Hayes, who died at London, Ont., June 29, was father of H. M. Hayes, station ticket agent, G.T.R., there.

G. H. Webb, Chief Engineer, Michigan Central Rd., Detroit, Mich., has been appointed Lieutenant Colonel of the Sixth Reserve Engineers, Detroit.

Capt. M. J. Powers, U.S.R., General Passenger Agent, Delaware & Hudson Co., Albany, N.Y., has been granted leave of absence for active military service.

F. H. Phippen, K.C., General Counsel, Canadian Northern Ry., Toronto, has been elected a director of Tooke Bros., Ltd., manufacturers of shirts, collars, neckwear, etc., Montreal.

Mrs. Meighen, widow of the late Robert Meighen, director, C.P.R., and mother of Brigadier General F. S. Meighen, director, C.P.R., died at her home in Montreal, July 12. She was a sister of Lord Mount Stephen, first President of the C.P.R.

A. F. Proctor has been appointed acting Chief Engineer, British Columbia Department of Railways, Victoria. At different times he has been engaged in engineering work on the Quebec Central Ry., C.P.R., Cape Breton Ry., Canadian Northern Ry., and Chicago, Milwaukee & St. Paul Ry.

Robert Patterson, Master Mechanic, G.T.R., Stratford, Ont., who was loaned, in January, to the Imperial Munitions Board, and placed in charge of the General Car & Machinery Co.'s plant at Montmagny, Que., has been relieved of his duties at his own request on account of ill health.

J. J. Rose, who has been appointed General Agent, Union Pacific System, Toronto, was born there, and was for 25 years in C.P.R. service, as Travelling Passenger Agent, and until 1912, as chief clerk in the Passenger Department, Toronto. During 1912 he was Travelling Passenger Agent, Robert Reford Co., steamship agents, Toronto, and from Feb., 1913, to July 1, 1917, Canadian Passenger Agent, Union Pacific System, Toronto.

Charles William Stokes, who has been appointed Assistant General Publicity Agent, C.P.R., Montreal, was born in London, Eng., July 27, 1886, and entered C.P.R. service in 1907, since when he has been, to 1911, chief clerk, European Advertising Department, London, Eng.; 1912 to 1916, chief clerk, Publicity Branch, Natural Resources Department, Calgary, Alta.; 1916 to June, 1917, Assistant Publicity Agent, same department, Calgary, Alta.

F. B. Tapley, who has been appointed Assistant Engineer of Maintenance, all lines, Canadian Government Railways, Moncton, N.B., was born at St. John, N.B., Oct. 17, 1876, and entered C.P.R. service in July, 1903, since when he has been ,to Apr., 1905, rodman, St. John, been, to Apr., 1905, to Apr., 1907, transit man, St. John, N.B.; Apr., 1907, to July 1, 1908, acting Resident Engineer, Belleville Jct., Ont.; July, 1908, to Dec., 1911, Resident Engineer, Belleville Jct., Ont.; Dec., 1911, to Oct., 1913, Resident Engineer, London, Ont.; Oct., 1913, to June 30, 1917, Assistant Engineer in office of Assistant Chief Engineer, Eastern Lines, Montreal.

James Hunt Norton, whose appointment as Division Freight Agent, Canadian Government Railways, Halifax, N.S.,

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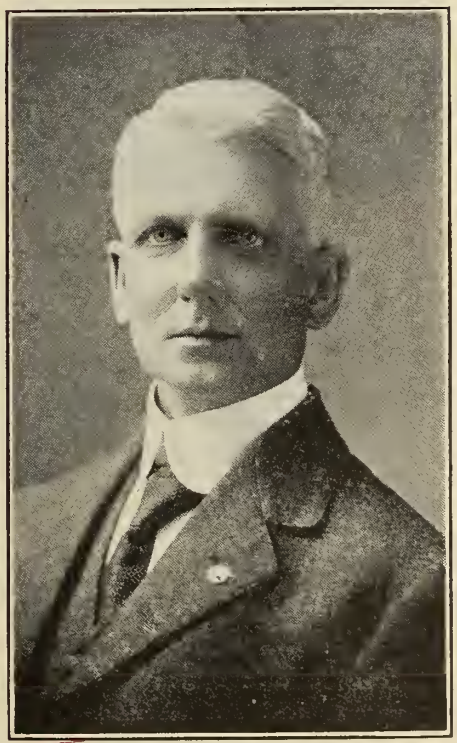
A. T. Weldon,
General Freight Agent, Canadian Government Railways



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K. Stewart,
Assistant Superintendent, District 4, Intercolonial Division, Canadian Government Railways

was announced in our last issue, was born at Shaftesbury, Eng., Apr. 21, 1884, and entered Canadian Government Railways service, June 1, 1899, since when he has been, to Dec. 31, 1909, in various positions in Car Service Department, from office boy to secretary to Car Accountant; Jan. to Sept., 1910, clerk in General Freight Agent's office; Sept., 1910, to Apr. 30, 1912, secretary to General Freight Agent; May 1, 1912, to Sept. 30, 1916, assistant chief clerk, General Freight Department; Oct. 1, 1916, to May 31, 1917, chief clerk to General Freight Agent, all at Moncton, N.B.

Kempton Stewart, whose appointment as Assistant Superintendent, District 4, Intercolonial Division, Canadian Government Railways, New Glasgow, N.S., was announced in our last issue, was born at Little River, N.S., Oct. 21, 1868, and entered Intercolonial service, Oct. 29, 1883, since when he has been, to Feb., 1888, operator, Oxford, N.S.; Feb., 1888, to Nov., 1890, operator and relieving agent, Spring Hill Jct., N.S., and various other points; Nov., 1890, to Feb., 1893, operator and relieving dispatcher, Truro and Point Tupper, N.S.; Feb., 1893, to Oct., 1912, trick dispatcher and relieving Chief Dispatcher, New Glasgow, N.S.; Oct, 1912, to June, 1917, Chief Dispatcher, Canadian Government Railways, New Glasgow, N.S.

John L. Hodgson, General Car Foreman, Canadian Government Railways, Transcona, Man., died there, suddenly, July 6. He was born at Simcoe, Ont., Nov. 15, 1858, and entered railway service with the G.T.R. as carpenter at Brantford, Ont. He was, from Apr. 1 to Sept., 1888, Car Inspector, Toronto; Sept. 1, 1888, to Mar. 1, 1897, Car Foreman, Toronto; Mar. 1, 1897, to Aug. 12, 1913, Master Car Builder, Western Division, Port Huron, Mich.; Aug. 12, 1913, to Aug. 23, 1915, Master Car Builder, Grand Trunk Pacific Ry., Transcona, Man.; and from Aug. 23, 1915, General Car Foreman, in charge of shops between Fort William and Winnipeg, Canadian Government Railways, Transcona, Man.

M. Frank Tompkins, whose appointment as Assistant General Freight Agent, Canadian Government Railways, Moncton, N.B., was announced in our last issue, was born at Margaree, N.S., Dec. 6, 1878, and entered Canadian Government Railways service Nov. 23, 1896, since when he has been, to Feb. 1, 1900, telegraph operator at various points; Feb. 1 to May 1, 1900, freight clerk, Truro, N.S.; May 1, 1900, to Sept. 1, 1902, freight clerk, Sydney N.S.; Sept. 1, 1902, to July 1, 1903, accountant in Superintendent's office New Glasgow, N.S.; July 1, 1903, to July 1, 1904, telegraph operator, New Glasgow, N.S.; July 1, 1904, to Jan. 1, 1911, relieving agent at various points; Jan. 1, 1911, to Nov. 30, 1914, chief clerk, Division Freight Agent's office, Halifax, N.S.; Nov. 30, 1914, to June 1, 1917, Division Freight Agent, Halifax, N.S.

Campbell Ross Mackenzie, who has been appointed General Manager's Assistant, Western Lines, Canadian Government Railways, Winnipeg, was born at Toronto, Jan. 10, 1883, and entered railway service in 1898, since when he has been, to 1900, transhipping clerk and freight biller, C.P.R., Toronto; 1900 to 1902, stationery clerk, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont.; 1902 to 1903, clerk to Auditor of Freight and Passenger Receipts, G.T.R., Montreal; 1903 to 1913, Superintendent's accountant, C.P.R., successively at Farnham,

Que., Ottawa, Ont., and Medicine Hat, Alta.; 1913 to 1914, in private business in Medicine Hat, Alta.; Aug. 1, 1914, to May 1, 1915, General Superintendent's Accountant, Canadian Government Railways, Moncton, N.B.; May 1, 1915, to June 1, 1917, chief clerk to General Superintendent, Transcontinental Division, Canadian Government Railways, Cochrane, Ont.

W. A. Cooper, Manager, Sleeping, Dining and Parlor Cars and News Service, C.P.R., Montreal, has been appointed by the Food Controller, as a member of the Food Consumption Central Committee, which will particularly take steps to provide for the conservation of food, and the prevention of its waste, and will govern its consumption in hotels, restaurants, clubs and private houses. He was born at Montreal, Mar. 22, 1871, and entered railway service in Feb., 1886, since when he has been, to June, 1891, secretary to Assistant General Manager, G.T.R.; June, 1891, to Dec., 1894, chief clerk to General Superintendent, Eastern Division, C.P.R., Montreal; Dec., 1894, to July, 1897, Inspector, Sleeping and Dining Car Department, same road; July, 1897, to Dec., 1905, Assistant Superintendent, same department; Dec., 1905, to Aug., 1908, Superintendent, same department; Aug., 1908, to Feb. 1, 1913, General Superintendent, and since Feb. 1, 1913, Manager, Sleeping, Dining and Parlor Cars and News Service, same road, Montreal.

H. T. Ruhl, who has been appointed Engineer, Maintenance of Way and Structures, Delaware & Huson Co., Albany, N.Y., was born at Mifflinburg, Pa., Sept. 29, 1882, and entered railway service, Sept. 22, 1902, since when he has been, to June, 1904, rodman, C.P.R., Nomingue, Que.; June, 1904, to July, 1905, transit man, Construction Department, Residency 2, Toronto-Sudbury Branch, C.P.R.; July to Aug., 1905, transit man on location, C.P.R., Ingersoll, Ont.; Aug. to Oct., 1905, transit man, on bridge surveys, C.P.R., Coldwater, Ont.; Oct., 1905, to Jan., 1906, transit man, on bridge surveys, C.P.R., Parry Sound, Ont.; Jan. to May, 1906, transit man on location, C.P.R., Parry Sound, Ont.; May, 1906, to Jan., 1908, Resident Engineer on Construction, C.P.R., Point au Baril, Ont.; Jan. to Oct., 1908, Resident Engineer on Construction, C.P.R., Muskoka, Ont.; Oct., 1908, to Nov., 1909, transit man on maintenance, C.P.R., North Bay, Ont.; Nov., 1909, to Oct., 1911, Resident Engineer, C.P.R., Sudbury, Ont.; Oct., 1911, to Sept., 1913, Resident Engineer, C.P.R., Farnham, Que.; Sept., 1913, to Nov. 20, 1915, Resident Engineer, Intercolonial Ry., New Glasgow, N.S.; Nov. 20, 1915, to June 15, 1917, Division Engineer, Canadian Government Railways, Moncton, N.B.

F. C. Gamble, M.Can.Soc.C.E., Chief Engineer, British Columbia Railways Department, whose connection with the government service has been severed, was born at Toronto, Oct. 23, 1848, educated at Upper Canada College, and moved to British Columbia about 30 years ago, on his appointment as Assistant Engineer on the government section of the C.P.R. above Yale. He was later transferred to the Dominion Government Public Works Department in B.C., and in 1887 was appointed Resident Engineer of the department there, in charge of all river and harbor improvements, public buildings and wharves, the dock at Esquimalt and the telegraph service. He resigned from Dominion service in 1897 on his appointment as Public Works Engineer and Inspector of Dykes for the Provincial Government, and in 1911 he was appointed Chief Engineer of the Provincial Railways Department. He was President, Canadian Society of Civil Engineers, in 1915, and is ex officio a member of the council of the society. He is also a member of the American Society of Civil Engineers.

Augustine V. Redmond, whose appointment as Division Engineer, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., was announced in our last issue, was born at Kingston, Ont., May 16, 1879, and graduated from Queen's University, Kingston, in April, 1903, with the degree of B.Sc. He entered railway service in May 1903, and was to Dec. 1903, engaged on concrete construction on the C.P.R.; Jan., 1904, to July, 1905, leveller on location surveys, Grand Trunk Pacific Ry.; Aug. 1905 to Oct. 1907, transit man and acting engineer in charge of location surveys, Dis-

W. A. Cooper,
Manager, Sleeping, Dining and Parlor Car and News Department, Canadian Pacific Railway

trict E, National Transcontinental Ry.; Jan. to Oct. 1908, Resident Engineer on location and construction, Canon City pipe line, Canon City, Col.; Oct. 1908 to Oct. 1909, Resident Engineer, District E, National Transcontinental Ry.; Oct. 1909 to May, 1915, Division Engineer, District E, N.T.R.; June to Sept. 1916, Resident Engineer, District 2, Transcontinental Division, Canadian Government Railways, Cochrane, Ont.; Oct. 1916 to Mar. 1917, acting Division Engineer, Transcontinental Division, C. G. R., Cochrane, Ont.; April to May, 1917, Resident Engineer, District 2, Transcontinental Division, C.G.R., Cochrane, Ont.

Canadian Government Railways Operating Charges.—The House of Commons on July 14, voted $25,000,000 on account of operating expenses for the current financial year. It was explained by the Minister of Railways that this amount would be distributed as follows: Intercolonial Ry., $16,000,000; National Transcontinental Ry., $8,000,000; Prince Edward Island Ry., $750,000; International Ry. of New Brunswick, $250,000.

Railway Finance, Meetings, Etc.

Algoma Central & Hudson Bay Ry., Algoma Central Terminals, Ltd.—A circular was issued by the bondholders committee recently to holders of the 5% first mortgage 50 year gold bonds, announcing that the arrangement scheme had been made effective. The accounts for the 21 months of the receivership showed that the net income of the companies, including the deposit and other interest, but before charging bond interest, terminals rent, or providing for depreciation, was $830,007. From this is to be deducted interest on the equipment trust bonds, $56,323, leaving $773,684, or approximately £155,000, from which must be deducted £31,000, being 3% interest payable to A.C.T., Ltd., bondholders for the year ended Aug. 1, 1915, leaving a balance of £124,000 subject to provision for depreciation and contingencies. The committee considered that the balance should be held available in Canada to provide for depreciation, renewals, repairs and contingencies, and that no further payment on account of interest should be made at present on the bonds of the terminal company or of the railway company. The committee reported that it was evident that the undertakings required very careful handling and nursing, and that the next year or two should be devoted to reorganizing the concerns and putting them into a condition to make the best of their opportunities.

Atlantic Quebec and Western Ry.—The first mortgage bondholders are being asked to assent to a modification of their rights, to enable the company to tide over the conditions created by the war. The Quebec Government land grant is part of the bondholders' security, and the cash derived from its sale is paid over to the trustees, who have invested it, and regularly supplement the principal by the annual interest. It is proposed that the interest shall be diverted to help to pay operating expenses, and that what is left should be used in meeting the bond interest. If there is nothing to meet the bond interest, it is suggested that the interest should be waived altogether. It is also suggested that the land grant investments should be realized and the proceeds devoted to the purchase of rolling stock and for other capital purposes.

Pacific Great Eastern Ry.—The British Columbia Minister of Finance was officially notified recently that the P.G.E. Ry. was not prepared to meet the interest on its bonds, guaranteed by the province, falling due July 1. The government has provided the money necessary to pay the interest; about $423,000. The government had previously paid interest on the guaranteed bonds as follows: Jan. 1916; $316,016.80; July, 1916, $315,366.39; Jan., 1917, $422,444.08.

Timiskaming & Northern Ontario Ry.—Passenger earnings for May, $57,-719.46; freight earnings, $118,473.50; total earnings, $176,192.96, against $54,-720.76, passenger earnings; $119,302.65, freight earnings; $174,023.41, total earnings, for May, 1916.

White Pass and Yukon Route. Gross earnings from Jan. 1 to June 7, $290,000 against $247,837 for same period 1916.

The International Railroad Blacksmith's Association has postponed for a year its annual convention, which was fixed to be held in August at Chicago.

Important Changes in Handling Less Than Carload Freight.

Plans which will be put in effect shortly will effect a complete change in the methods of receiving, loading and forwarding less than carload freight, of all descriptions, upon all portions of the Pennsylvania Rd., east of Pittsburg. The new arrangements will constitute probably the most far reaching improvement that has ever been attempted, on a large scale, in freight transportation practices. The present custom of receiving less than carload freight indiscriminately, at all stations, at any time of the day, for all destinations, which has been followed since the early days of railroading, will be abolished. In its place there will be substituted a carefully devised plan whereby the acceptance and loading of freight, in less than carload lots, will be conducted according to a regularly established system, and such freight will be automatically concentrated into full loads at the point of shipment.

The two most important features of the new plan for handling less than carload freight are: 1. The inauguration of shipping days, or substantially "sailing dates," on which cars will depart from various points of origin to specified destinations. Freight will be accepted on the proper shipping days only, and the cars will "sail" as specified. 2. The designation of particular stations at which freight will be exclusively received for specified destinations; freight for such points will be accepted at the stations named only. The new plan represents the results of prolonged investigation, conducted by the Pennsylvania Rd. officers, for the purpose of determining the best practical means of obtaining increased efficiency and dispatch in the handling of less than carload freight. The primary purposes for the adoption of the new method are four fold: 1. Elimination of delay incident to rehandling of freight under the present methods of consolidating small shipments into full carloads at transfer stations. This will give the shipper quicker service than is possible under the old method. 2. Conservation of car supply by effecting better average loading than is possible under the transfer system. This will increase the cars available for commercial freight, as well as government supplies. 3. Reduction in number of car and train movements required to transport a given volume of freight. This will increase the capacity of the whole railway's plant, and will release trackage and locomotives for the movement of troops, government supplies and commercial freight. 4. Improvement in the regularity of freight service by systematizing and simplifying operation. This will result from the elimination of a large proportion of the complicated rehandling of freight, which is now unavoidable, with the attendant liability to damage. It is the belief of the management of the railway that the proposed change will increase the efficiency, promptness and regularity of the freight service, and therefore will commend itself to shippers as facilitating the conduct of their business.

Under the present method of handling less than carload freight, a shipper having a small consignment to transport from city A to city B can take his goods to any freight station in city A at any time during the ordinary working hours. In the course of the day, or perhaps the next two or three days, the freight will be loaded into a car and run out to a transfer station, which may be a few miles, or more than 100 miles, distant. There it will be unloaded and trucked into another car, in which numerous small shipments, from many other points, for city B are being consolidated in the effort to make up a full car. Under the proposed plan there will be certain days on which less than carload freight for city B will be accepted at one or more specified stations in city A, and such freight will be accepted only on the days, and at the particular station, or stations, named. On the days specified a car for city B will leave the originating station or stations. The service will be daily, tri-weekly, semi-weekly or weekly, according to the average volume of traffic, and freight for city B will be taken only in such cars. Under this method there will be no subsequent transferring or rehandling of the freight, and the car will move straight through to city B without breaking bulk.

In large cities, where a number of freight stations are maintained, traffic to the various principal destinations will be apportioned between the stations. For example, where conditions permit, very large shipping centres will be subdivided into zones, each embracing several freight stations. From each zone service will be given on specified days to a number of destinations. In such cases cars for various points will be alternated between the stations in a given zone. If, for instance, a certain zone, containing several freight stations, is to have three cars a week to a certain desination, the car may leave station A on Monday, station B on Wednesday, and station C on Saturday. This will equalize drayage distance between shippers in various portions of the zone.

To eliminate the congestion of trucks and teams occurring at nearly all large freight stations in the afternoon, the "sailing hours" of cars for certain destinations will be made earlier than the general closing time of the station. To illustrate—at a station from which several regular cars are operated daily, to sundry destinations, the "sailing time" for the cars to city B and city C may be fixed at noon and for city D and city E at 1 p.m., while freight for other points may be accepted up to the closing hour. This will require the delivery of a considerable quantity of freight in the morning hours of the "sailing day." The result will be to distribute the receipts throughout the day, extend the capacity of the station and facilitate the movement of traffic. Shippers will be ,enefited, as their teams and wagons will not be forced to stand idle for several hours before being able to get to the platform, as is often the case under the present conditions.

The application of the plan at smaller stations—those at which less than carload freight would not accumulate into carloads with sufficient frequency to operate through cars to any given point—will be limited to the establishment of shipping days. It is the intention to continue sufficient local "pick-up" freight service to meet the requirements for that form of service. One important result which the plan is expected to bring about will be a reduction in loss and damage to freight, owing to the greater promptness with which it will be loaded and dispatched. The simplification of railway operation, as well as the elimination of rehandling of less than carload freight at transfer stations, will also diminsh the amount of freight going astray.

The proposed plan is being worked out on scientific lines. A most careful and elaborate study has been made of the movement of less than carload freight to and from all points on the entire Pennsylvania Rd. and its connections, and the nature and frequency of service to be afforded at each station will be based upon that study. Future changes in the current of traffic will be taken care of promptly as they become evident. A conservative estimate shows that the adoption of the proposed plan will result in the saving of at least 1,000 box cars a day in the handling of less than carload freight on the lines east of Pittsburg and Erie. The new plan will be put into effect first in the Philadelphia district, where it will become operative in the near future. As soon thereafter as possible it will be applied at New York, Baltimore, Pittsburg and Buffalo, following which it will be inaugurated at all stations. When making the new plan effective in any locality it will be explained, as to its purpose and method of operation, to the local board of trade, chamber of commerce and other trade bodies. This duty will be performed personally by the various division freight agents. The working out of details for the various stations will be completed, on each grand division, under the joint direction of the Superintendent of Stations and Transfers and the division freight agent, representing respectively, the transportation and traffic departments. They will be assisted in this work by the division superintendents' staffs.

Last winter some of the principal Canadian railways adopted the principle of consolidating carload freight, but have not extended it to the same extent as is being done by the Pennsylvania. The matter was discussed at a meeting in Toronto early in July, and committees were appointed to work out details for an extension of the system.

C.P.R. Stations in Ottawa and Hull.—The Board of Railway Commissioners has granted the company permission to handle its Hull passengers at Beemer station, Que., instead of the city station used heretofore. The commissioners heard the objections against the closing of Broad St. station, Ottawa. E. P. Flintoff the company's solicitor, stated that while the company had not been petitioned or asked to close the Broad St. station, it had been under the impression for several years that such a change would be welcomed by the greater majority of those in Ottawa who were frequent travellers. An order in the matter will be issued in due course. It is said that all passenger trains will be operated into the central station, Ottawa, and that freight trains will be operated into Broad St. Considerable work will be necessary at the G.T.R. central station before the C.P.R.'s Ottawa passenger business can be centralized there, and it is not yet known how soon it can be done. The closing of the present Hull station will then be necessary. Beemer station is also in Hull, being on the main line, within a short distance of Hull station ,and when the change takes place all the Hull business will be handled there. Its location, both as to the city of Hull and the electric railway lines, is much more convenient for the travelling public than the present Hull station.

Minister of Railways' Statements on Canadian Government Railway Operation.

The Minister of Railways, in introducing his estimates in the House of Commons recently, said the Canadian Government Railways now extended to 4,063 miles, made up as fololws: Intercolonial, 1,562; National Transcontinental, 2,009; Prince Edward Island, 275; International of New Brunswick, 112; St. John & Quebec, 105.

During the financial year ended Mar. 31, the Intercolonial earned $16,802,290, and the expenditures were $15,664,577, giving a surplus of $1,137,713, which will be absorbed by the equipment renewal account. The surplus at Mar. 31, 1916, was $1,517,295.

On the National Transcontinental the earnings were $5,916,550, and the operating expenses $7,883,177, compared with $3,758,387 and $4,410,528 respectively for the 11 months ended Mar. 31, 1916. The deficit for the year was $1,966,627 against deficit of $625,141 at Mar. 31, 1916.

The Minister did not give any separate figures for the Prince Edward Island Ry., the International Ry. of New Brunswick, or the St. John & Quebec Ry., but concluded his references to the operations of the government railways by stating that the earnings of the entire system were $23,465,566, compared with $18,373,143 for the previous year, while the operating expenses were $24,645,433, against $17,-797,061 for the previous year. The deficit on the combined operations was $1,179,867, against $576,182 in the previous year. The deficit on the years operations was, he explained, due to increased wages, the increased cost of coal, extre weather conditions, which caused an expenditure of $169,288 on the Intercolonial for snow fighting, as compared with $64,757 in the previous year, and the necessity of establishing train service on the National Transcontinental not yet warranted by the business offering.

The total number of passengers carried over the system for the year 1916 was 5,673,796. Included in this number were 277,135 millitary and naval passengers. There weer few accidents, no passengers had been killed, but 22 had sustained injuries.

Sir James Lougheed laid before the Senate, June 19, the following statement as to the earnings of the Intercolonial and the National Transcontinental Railways for the following three districts:

District	Track mileage	Passenger Earnings	Freight earnings	Mails and express.	Total.	Less miscellaneus.	Grand total.	Earnings per mile.
No. 5. Moncton to Diamond Jc Via Transcontinental.	456	$ 64,128.96	$1,147,920.17	$ 9,270.84	$1,221,319.96	$ 178,291.38	$ 1,043,028.59	$ 2,292.37
No. 1. Montreal to Mont. Joli.	355	1,830,510.61	3,981,529.89	335,989.85	6,167,930.35	302,531.89	5,865,398.46	16,522.25
No. 2. Mont Joli to Moncton, including Br'ch Derby Jct. to Fredericton.	421	1,231,067.66	2,172,261.76	235,718.58	3,639,078.30	105,629.30	3,533,448.96	3,392.99

The Hamilton Radial Electric Ry. has been ordered to pay the County of Wentworth, Ont., $1,165.30, representing annual payments for the years 1915, 1916, and 1917 for a portion of the highway occupied by its track. The company contended that it was no longer compelled to make such payment, as the portion in question had been annexed by the city, and in any event, the company no longer claimed any franchise privilege over it.

Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending July 6, 1917.	Wheat. bushels.	Oats. bushels.	Barley. bushels.	Flax. bushels.	Totals. bushels.
Fort William—					
C.P.R.	954,647	470,849	35,867	.....	1,461,363
Consolidated Elevator Co.	358,689	248,661	9,725	45,218	662,293
Empire Elevator Co.	248,009	211,479	23,757	117,326	594,571
Ogilvie Flour Mills Co.	501,449	105,970	5,738	.....	613,157
Western Terminal Elevator Co.	386,602	140,044	10,394	260,810	797,850
G.T. Pacific	644,401	544,490	38,034	53,480	1,280,405
Grain Growers' Grain Co.	598,772	295,576	13,800	.....	908,247
Fort William Elevator Co.	436,838	155,785	15,818	106,961	715,402
Eastern Terminal Elevator Co.	243,967	266,569	8,465	.....	521,001
Thunder Bay Elevator Co.	527,072	155,589	16,853	34,559	734,073
Port Arthur—					
Port Arthur Elevator Co.	1,356,269	1,042,398	73,854	74,955	2,547,476
D. Horn & Co.	125,062	84,013	23,984	61,699	294,758
Dominion Government Elevator	1,251,628	588,829	51,825	133,861	2,026,143
Grain afloat	.....	.....	.....	.....	.....
Total Terminal Elevators	7,633,405	4,312,052	328,213	882,869	13,156,739
Saskatoon Dom. Govt. Elevator Co.	155,152	97,279	4,022	9,845	266,298
Moose Jaw Do. Govt. Elevator	414,009	153,390	6,824	5,546	579,769
Calgary	92,275	95,200	9,668	591	197,734
Vancouver	9,512	22,645	.....	.....	32,157
Total Interior Terminal Elevators	670,948	368,514	20,514	15,982	1,075,958
Depot Harbor	142,054	.....	.....	.....	142,054
Midland—					
Aberdeen Elevator Co.	469,573	61,865	.....	.....	531,438
Midland Elevator Co.	.....	.....	.....	.....	.....
Tiffin, G.T.P.	1,089,150	745,426	63,445	.....	1,898,021
Port McNicoll	101,558	1,590,994	5,245	.....	1,704,797
Collingwood	.....	43,005	.....	.....	43,005
Goderich	240,763	385,799	23,721	.....	649,833
Western Canada Flour Mills Co.	117,307	.....	.....	.....	117,307
Kingston—					
Montreal Transportation Co.	164,860	124,823	.....	.....	289,503
Commercial Elevator Co.	23,150	90,272	507	.....	113,929
Port Colborne	385,038	870,007	.....	.....	1,255,045
Prescott	.....	.....	.....	.....	.....
Montreal—					
Harbor Commissioners, No. 1	391,117	1,425,331	180,308	.....	1,996,756
Harbor Commissioners, No. 2	404,435	646,814	74,464	.....	1,125,713
Montreal Warehousing Co.	81,100	924,010	102,929	.....	1,108,039
Qeubec Harbor Commissioners	3,851	85,664	.....	*8,782	98,297
West St. John, N.B.	131,166	5,795	6,252	.....	143,213
Halifax, N.S.	166,558	.....	.....	.....	166,558
Total Public Elevators	3,918,500	6,999,805	456,421	*8782	11,383,508
Total quantity in store	12,22,853	11,680,571	805,148	907,633	25,616,205

*Corn.

The Toronto, Hamilton & Buffalo Railway and the Town of Dundas.

The consideration of the Toronto, Hamilton & Buffalo Ry.'s bill for the confirmation of an agreement with the Hamilton & Dundas St. Ry., has been referred to the House of Commons for consideration by the Minister of Justice. The agreement provides for the handling of freight from the T.H. & B.R. into Dundas by the H. & D.R. The original agreement was made 20 years ago, and was to run for 50 years, but as the general law of Ontario only sanctions agreements for 21 the Town of Dundas, and in the year following the signing of the original agreement was ratified by the Ontario Legislature. Under the terms of the agreement the T.H. & B.R. has been operating freight traffic over the H. & D.R. into Dundas, and now, at the close of the 21 year period, it is applying to the Dominion Parliament, to which it is subject, for the ratification of the 29 year period of the agreement. The Town of Dundas opposes the application, first on the ground that freight cars were left on the streets, and, secondly, after the company agreed to spend $15,000 on a new switching ground and freight lines, to the use of steam locomotives in such yard. The cost of two electric locomotives to handle the traffic would be $80,000, which would mean an interest charge of $4,800 a year, while the total earnings from the traffic are about $5,400 a year. The company could not see its way to adopt electric power, but offered to leave the matter with the Board of Railway Commissioners. This did not satisfy the representatives of Dundas, and the Railway Committee amended the bill by ratifying the agreement making the term of its operation five years, instead of the further period of 29 years asked. It was contended in the House of Commons on behalf of the company that the agreement must be ratified for the whole period or the ratification must be refused. The company had made up its mind, however, that if the Town of Dundas would not grant what it is thought to be entitled to it will withdraw the two clauses of the bill referring to the matter and leave the town to handle its freight as it sees fit. On behalf of the town it was contended that the railway company, having received the benefit of the agreement up to the present, ought not to use the threat of withdrawal on the expiration of the 21 years to compel the town to carry out what it was alleged was a bad bargain.

Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association, up to Apr. 30, had contributed $18,775.28 to the Red Cross Fund; $26,208.51 to the Canadian Patriotic Fund, and had donated $12,297.59 direct to enlisted employes.

The British Columbia Electric Ry. reports that approximately 21% of its employes have joined the military or naval forces, or have entered munition plants, and their places have been filled temporarily, until their return, or for the duration of the war. The various branches are represented as follows: Platform men 19%, shopmen 13%, electricians 20%. The last mentioned class includes substation men, who form the largest percentage of those enlisting.

Railway Building Records.—Following is an extract from a letter from one of the officers of No. 2 Battalion, Canadian railway troops, which is commanded by Lieut.-Col. F. F. Clarke, formerly a Canadian Northern Ry. engineer: "We hold the record for railway building in France. We had a very difficult piece to build, because it was in full view of the German lines in daylight for about 1½ miles across a valley. On Tuesday night at 6.30 it started to rain and got very foggy and we got to work, and by midnight on Wednesday we had built 12,069 feet of line and ran a train over it. When the air cleared on Thursday the Germans saw the railway track from their observation balloon and started to shell it, and after sending over about 200 shells they broke a rail, which was repaired in a few minutes. This line can only be used at night, without light or noise. We have built 22 miles of light railway and 15 miles of standard gauge, with 4 railway yards of about 3 miles of track in each. This makes about 49 miles of railway built and completed in 75 days."

Personal Notes.

Jas. Carruthers, President, Canada Steamship Lines, Montreal, has given three aeroplanes for war purposes.

J. L. B. Smith, Roadmaster, Toronto Civic Ry., St. Clair Ave. Division, has joined the Royal Flying Corps.

Lieut. A. S. Bertram, whose death from wounds was reported July 13, was a son of Henry Bertram, of John Bertram & Sons Co., Ltd., Dundas, Ont.

Capt. S. Stibbard, who was reported recently as missing, was, prior to the war, chief clerk to Division Superintendent of Telegraphs, Grand Trunk Pacific Ry., Winnipeg.

Capt. H. J. Hall, who has died of wounds, was formerly on the staff of the Dominion Government Railway to Hudson Bay, and prior to the war held a commission in the 79th Cameron Highlanders of Winnipeg.

Lieut. F. Clarke, who has been engaged with Grant Smith & Co., railway contractors, etc., Vancouver, B.C., for some time, is reported to be organizing a railway construction draft for overseas service.

E. W. Beatty, K.C., Vice President and General Counsel, C.P.R., is said to have headed a syndicate of Montreal and Toronto men, who subscribed $10,000 to send a platoon of the 48th Highlanders, Toronto, to the United States for recruiting purposes.

F. P. Gutelius, Jr., son of F. P. Gutelius, ex General Manager, Canadian Government Railways, was graduated from Lafayette College, Easton, Pa., recently, with his degree in civil engineering, in absentia, he being on active service with a Canadian battalion.

A. A. Wright, formerly Managing Director, St. Lawrence & Chicago Steam Navigation Co., Toronto, has been spending most of his time in Montreal for some months past, in connection with the building of steam trawlers and drifters for the Naval Service Department.

496. **Lieutenant R. S. Richardson**
Formerly Superintendent Canadian Government Railways, Fort William, Ont., now of No. 13 Light Railway Company, R.E., British Expeditionary Force

Lt. Col. F. M. McRobie, General Manager, Canadian Transfer Co., Montreal, who went overseas in March in command of the 244th, Kitcheners Own, Overseas Battalion, C.E.F., **Lt. Col. J. M. MacDonell** and **Capt. W. L. Lanigan,** of the Railway Troops, were among some 800 C.E.F. officers and men who arrived at Halifax, N.S., July 21, from England.

Capt. John MacLeod, Prince Albert, Sask., who joined the Inland Water Transport Section, Royal Engineers, recently, has been operating on various rivers in the west for the past 20 years, and is stated to be the first man to run a steamboat on the Peace River, having navigated the s.s. Peace River there, 17 years ago.

E. Camp, younger son of W. J. Camp, Assistant Manager, C.P.R. Telegraphs, Montreal, has joined the Royal Flying Corps, and is at Toronto for training. F. E. Camp, the older son, and formerly Inspector, C.P.R. Telegraphs, Brandon, Man., who has been in overseas service for more than a year, has been transferred to Bramshott Camp, Eng., as chief signal officer.

Frank Jones, of F. & W. Jones, grain, vessel and marine insurance brokers, Fort William, Ont., left there recently to take a commission in the Canadian Navy for the duration of the war, and is now training at Halifax, N.S. This is the second member of the firm to enlist. Edward Jones, who went overseas in Aug., 1916, is now a lieutenant in charge of a patrol boat in the Mediterranean.

Flight Sub-Lieutenant Hugh Allan, who died in France, July 6, was the only son of Sir Montagu Allan, formerly of the Allan Line Steamship Co. No details have been received. He had qualified recently in the Royal Flying Corps, and had been in France a short time. While in Montreal, the late Lieut. Allan held a commission in the 5th Royal Highlanders of Canada, of which his father was honorary colonel. Sir Montagu is at present associated with the Canadian Pensions Board in London, Lady Allan is actively engaged in war work, and Miss Allan is acting as a voluntary nurse in France. Lady Allan and two daughters were passengers on the s.s. Lusitania when she was sunk by the Germans, the two daughters being drowned, while Lady Allan was severely injured.

John Stoughton Dennis, Chief Commissioner of Colonization and Development, C.P.R., Montreal, has been loaned to General White, commanding the British-Canadian recruiting mission in the United States, to assist in obtaining British and Canadian recruits for the army and has been given charge of recruiting operations in the northwest portion of the United States, with headquarters at Chicago, whence he will carry on an active campaign to give all British and Canadian citizens of military age resident in the Western States an opportunity of joining the army. He was born at Toronto in 1856, the son of the late Lt. Col. J. S. Dennis, who was the first Surveyor-General of Canada, and subsequently the first Deputy Minister of the Interior. He was educated at the Toronto and Kingston Grammar Schools, and Upper Canada College, Toronto, and graduated from the old military school at Kingston, Ont., before the establishment of the Royal Military College there. He served articles as a Dominion land surveyor with the late Lindsay Russell, Assistant Surveyor General, and was appointed Dominion topographical surveyor in 1877. From 1872 to 1879, he was engaged on survey work for the Dominion Government in Manitoba and the North West Territories, and from 1879 to 1882, was engineer and surveyor for the Hudson's Bay Co., and laid out what is now a portion of the southern part of the city of Winnipeg, constructing the first trunk sewer there. In 1882 he became a member of Vaughan, Dennis and Co., consulting engineers, land agents, etc., Winnipeg, and in 1885 entered Dominion Government service as Inspector of Surveys, becoming Chief Inspector in 1892. In 1896 he entered the Northwest Territories Government service and in 1899 was appointed Deputy Minister of Public Works, Northwest Territories. He en-

tered C.P.R. service in 1902, as Superintendent of Irrigation and Chief Engineer of Irrigation Works, then being carried out in Alberta. He was subsequently appointed Land Commissioner for British Columbia, and in 1904, Assistant to the Second Vice President. In 1910 he was appointed Manager of Irrigation, and Assistant to the President, C.P.R., at Calgary, Alta., and was removed to Montreal, Nov. 1, 1916. After graduating from the military school, he served for a short time as lieutenant of the Governor General Foot Guards at Ottawa, and in 1885, commanded, as captain, the Intelligence Scout Corps attached to General Middleton's column, during the Riel rebellion, being mentioned in dispatches for service at the battle of Batoche. He was later transferred to the reserve of officers with the brevet rank of major, and in 1916 was appointed lieutenant colonel commanding the Calgary battalion of the reserve militia. He joined the Canadian Society of Civil Engineers as a member, Nov. 21, 1901, was a councillor for 1906 and 1911, was Vice President in 1907 and is President this year. He is a past President of the American Society of Irrigation Engineers.

Canadian Railway Troops' Work in France.

The Dominion Government received recently from general headquarters in France the following summary of the work of the Canadian railway troops for the month of April:

Broad gauge lines—	
Miles located	44.75
Miles graded	36.25
Miles grade repaired	43.55
Miles track laid	51.50
Miles ballasted	46.45
Miles surfaced	43.67
Average number of miles maintained	60.70
Average number, ordinary ranks, C.R.T., daily on construction	1,597
Average number, ordinary ranks, C.R.T., daily on maintenance	686
Casualties from shell fire: officers, nil; ordinary ranks	7
Average number of British unskilled labor attached	2,660

In most cases these lines were laid over the remains of old metre gauge lines, which tended to hinder rather than help the work. Owing to the destruction of the lines by the enemy, it was necessary to do a considerable amount of bridge work.

Narrow gauge lines—	
Miles located	57.58
Miles graded	64.98
Miles grade repaired	28.74
Miles track laid	72.89
Miles ballasted	77.84
Miles surfaced	49.63
Average number of miles maintained	100.06
Average number, ordinary ranks, C.R.T., daily on construction	2,504
Average number, ordinary ranks, C.R.T., daily on maintenance	1,258
Casualties from shell fire: officers, 3; ordinary ranks	75
Average number of British labor attached	3,276

A Canadian Engineer's Grave in France.

The accompanying illustration shows the grave of the late Lieut. Bruce H. A. Burrows, B.Sc., of Toronto, in Baupaume Post Military Cemetery, about a mile north-east of Albert, France. Following are extracts from letters of other lieutenants of the same company of Canadian Engineers, referring to the funeral, grave, etc.

From Lieut. J. Balfour Thom, Nov. 26, 1916: "The funeral was held today at 4 p.m., being attended by Major Irving, D.S.O., of Toronto, the C.R.E. of the division, Major Ward, the Adjutant, and all the officers of this company; the officers of the other two companies were unable to attend. The service was performed by Capt. J. J. MacCaskill, chaplain of the 73rd Battalion, and afterwards a wooden cross, painted white with black lettering, was erected."

From Lieut. J. Balfour Thom, Nov. 27, 1916: "To-day I had a wooden railing, painted white, placed around the grave and the grave itself outlined with chalk. Much to my surprise, when I went over to see the grave this afternoon I found that one of the men of his section had made a small design in chalk of the engineers' badge at the head of the grave and that a number of maple leaves had been placed on the grave by various members of the company."

From Lieut. C. Ivey, Dec. 4, 1916: "We laid him to rest in a little British cemetery about a mile from Albert, on the south side of the Albert-Bapaume road. The whole company turned out, together with our headquarters staff, and after the service and he was laid to rest they filed by and saluted him."

A Canadian Engineer's Grave in Bapaume Post Military Cemetery, Albert, France.

Hon. Capt. the Rev. J. J. McCaskill, mentioned above, was reported early in July as wounded. He was educated in the United States and had a pastorate there, subsequently becoming pastor of Douglas Ave. Presbyterian Church, St. John, N.B. He spent some time in Montreal, while the 73rd Battalion was recruiting, and went to the front as its chaplain.

G.T.R. Apprentices.—The G.T.R. is said to have reduced the apprenticeship period for boys in its locomotive shops from 5 to 4 years, to have raised the pay from $10, $12, $14, $17 and $20 a month for the respective years to $12, $14, $17 and $20 a month. Boys who are entering upon the 5th year of their apprenticeship will be freed; and the boys who heretofore have been acting as assistants to men working on the percentage system and receiving a proportion of pay, will hereafter receive the full schedule of pay.

A railwayman has been made First Lord of the Admiralty. This is not surprising. The railway business everywhere is associated with brains and capacity.—Toronto Globe.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from Jan. 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Increase
July	$3,834,200	$2,636,800	$1,197,400	$ 711,000
Aug.	3,684,900	2,612,900	1,072,000	614,300
Sept.	3,187,900	2,455,300	732,600	x177,300
Oct.	3,716,800	2,496,500	1,220,300	x36,700
Nov.	3,722,300	2,472,300	1,250,000	38,600
Dec.	3,485,400	2,661,600	823,800	x378,300
Jan.	2,832,600	2,350,500	482,100	226,700
Feb.	2,358,600	2,250,400	108,200	x21,200
Mar.	3,273,200	2,655,100	618,100	57200,0
Apr.	3,315,500	2,557,600	757,900	208,000
May.	3,784,700	2,730,300	1,054,400	377,290
	$37,196,100	$27,879,29g	$9,316809	$1,764,000
Incr	$7,148,300	$5,384, 300	$1,764,000	.....

x Decrease.

Approximate earnings for June, $4,048,600, against $3,377,200 for June, 1916, and for three weeks ended July 21, $2,710,000 against $2,626,900 for same period 1916.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
Jan.	10,158,307.86	7,726,829.36	2,431,478.50	341,070.27
Feb.	9,084'276.76	7,098,227.96	1,986,048.80	x308,293.94
Mar.	11,846,542.98	7,909,225.16	3,937,317.82	516,987.46
Apr.	12,355,519.60	8,180,541,98	4,174,979,62	441,241,66
May.	14,355,149.63	9,803,426.84	4,551,719.79	179,436.88
	$57,799,796.83	$40,718,254.30	$17.081.542.53	$1,196,442.35
Inc.$	6,680,684.83	$ 5,511,242.36	$1,169,442.32	.....

x Decrease.

Approximate earnings for two weeks ended July 14, $5,968,000 against $5,354,000 for same period, 1916.

Grand Trunk Railway Earnings.

Aggregate traffic receipts from Jan 1 to June 30—

	1917	1916	Increase
G. T. R.	$23,969,070	$21,061,761	$2,907,309
G. T. W. R.	4,687,643	4,597,519	90,124
D.G.H. & M.R.	1,665,745	1,631,250	34,495
Totals .	$30,322,458	$27,290,530	$3,031,928

Approximate earnings for three weeks ended July 21, $4,759,338 against $4,031,339 for same period, 1916.

Grand Trunk Pacific Ry. Earnings.

The approximate earnings of the Prairie Section, 916 miles, from Jan. 1 to June 30, were $2,509,457 against $2,339,991 for same period 1916.

Board of Railway Commissioners Jurisdiction over Canadian Government Railways.—In Committee in the House of Commons on the Consolidated Railway Bill, July 14, the Minister of Railways said: "It is our intention to introduce an amendment to the Government Railways Act to put government railways under the control of the Board of Railway Commissioners. I expected that the bill would be drawn before this, but my law clerk has been ill. Under the Railway Act, the Government railways are not under the Board of Railway Commissioners' jurisdiction, and in the bill for the consolidation of the Railway Act, sec. 5, which deals with the question of the persons, companies and railways affected, provides that the act, when passed, shall apply to railways "other than government railways." The matter was allowed to stand as it was until the new bill referred to by the Minister is considered.

The Canadian Ticket Agents Association has, in consequence of the war, abandoned its idea of holding a three days meeting and outing in Montreal, on Sept. 25, 26 and 27, and will hold its annual meeting only, on Sept. 26, at the Windsor Hotel, Montreal, at 10 a.m.

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Military Honors Etc., Given C.P.R. Officials and Employes.

Following is a partial list of C.P.R. officials and employes who enlisted for active service in Europe, to whom the King has awarded decorations and medals for bravery, gallantry and devotion to duty in the field:

Companion of Order of St. Michael and St. George—Lt.-Col. C. W. P. Ramsay, Engineer of Construction, Montreal.

Distinguished Service Order—Lt.-Col. G. S. Cantlie, General Superintendent of Car Service, Montreal; Lt.-Col. F. A. Gascoigne, Superintendent of Car Service, Montreal; Major J. A. Hesketh*, Assistant Engineer, Winnipeg.

Military Cross—Temp'y Lieut. C. F. Casey†, bridgeman, Brandon; Lieut. J. A. Hamilton†, conductor, Brandon; Lieut. E. Irvine, transitman, Schreiber; Reg. Sergt.-Major J. Jeffery, clerk, Montreal; Major W. M. Kirkpatrick, Assistant Freight Traffic Manager, Montreal; Lieut. W. B. McArthur†, clerk, London, Eng.; Lieut. W. H. McMurray, clerk, Lacombe East; Lieut. J. K. Matheson*, clerk, Calgary; Co. Sergt.-Major H. Neighbour*, storeman, Winnipeg; Lieut. A. M. Robertson*, transportation student, Montreal; Sergt.-Major D. Stuart*, constable, Calgary; Capt. L. B. Unwin, Accountant, Schreiber; Lt.-Col. F. A. Wilkin*, Surveyor, Winnipeg.

Distinguished Conduct Medal—Corp. A. P. Hancock. For conspicuous gallantry in action. He established his machine gun close to the front line and broke up enemy counter attacks. Later, with a small party, he advanced on an enemy machine gun which he had located, and captured the gun with great skill and determination. Freight checker, Winnipeg.

Pte. R. Jobling. For conspicuous gallantry in action. With an n.c.o. he jumped on the parapet and bombed the enemy back, accounting for many with his revolver, after his supply of bombs ran out, and saving the situation at a critical time. Bridgeman, Lethbridge.

Pte. R. H. Jones. For conspicuous gallantry in action. He carried seven messages to the front line under very heavy fire. Later he rescued many wounded men. He set a splendid example of courage and coolness. Yardman, McAdam Junction.

Sergt. J. R. Langford. For conspicuous gallantry. He displayed great bravery and coolness in the performance of his duties under heavy fire and most trying conditions. Fireman, Ottawa.

Corp. W. N. Legg*. For conspicuous gallantry. A machine gun in the enemy's position having caused heavy losses and held up an attack, he crept out in the night, under heavy fire, located the gun and enabled it to be silenced. His bravery and devotion were very marked. Fireman, Revelstoke.

Sergt. D. MacRae. For conspicuous gallantry when rescuing men buried by a shell. He was exposed to the view of the enemy and under continuous fire. Fitter, Calgary.

Co. Sergt.-Major H. Neighbour*. For conspicuous gallantry. He had invariably shown the greatest bravery, coolness and devotion to duty and has given a fine example to all with him, under the most trying conditions. Storeman, Winnipeg.

Second Corp. J. F. Norton. For conspicuous gallantry and devotion to duty as a telephone lineman. He set a fine example under heavy shell and rifle fire. Inspector, Swift Current.

Gunner S. Stickland*. For conspicuous gallantry as battery telephone lineman. During operations he was constantly under shell and rifle fire, patrolling and repairing battery lines, until he was finally wounded by shrapnel while on duty as a telephonist in a forward infantry trench. Machinist, Angus.

Pte. B. A. Stiles*. For conspicuous gallantry during an action. He assisted to carry wounded all day and night under heavy fire, and only gave up when thoroughly exhausted and having been slightly wounded. Fireman, B.C. District.

Military Medal — Pte. A. Anderson, locomotive man, Souris; Sergt. R. J. Cameron, fitter, Calgary; Pte. T. Campbell*, sectionman, Ibsen; Acting Corp. D. S. Charleson, inspector, Boston; Pte. T. C. Christie, trainman, Fort William; Corp. A. W. Courtney, wiper, Calgary; Gunner J. R. Coutts*, operator, Goderich; Gunner S. L. England*, clerk, Montreal; Sergt. W. Figsby*, fireman, Kenora; Sergt. W. Forsyth*, wiper, Brandon; Pte. H. Hamer, foreman, West Toronto; Gunner A. P. Hourd*, clerk, Winnipeg; Lance-Corp. C. M. C. Hoyt, inspector, Angus; Pte. D. Hutchinson*, wiper, Strathcona; Pte. M. S. Kennedy, assistant agent, Gimli; Co. Sergt.-Major R. Kennedy, clerk, Montreal; Staff Sergt. Wheeler C. Landry, carpenter, Farnham; Sapper E. A. McCready, operator, Winnipeg; Lance-Sergt. C. Moore†, heater, Angus; Corp. R. H. Morton, baggageman, Yorkton; Corp. R. G. Morrow, clerk, Liverpool, Eng.; Sergt. G. Nuttall, locomotive man, Calgary; Pte. R. G. Oke*, brakeman, Souris; Pte. W. G. Pavey*, watchman, Shuswap; Sergt. P. T. Roberts*, clerk, London, Eng.; Pte. W. L. Rutledge, brakeman, MacLeod; Pte. J. Savage*, wiper, Winnipeg; Corp. S. W. Shackell, transitman, Smiths Falls; Pte. E. Slattery*, cleaner, Glen Yard; Sergt.-Major D. Stuart*, constable, Calgary; Pte. J. M. Thrasher, fireman, Kenora; Acting Co. Sergt.-Major W. Westwood†, cook, Montreal; Pte. H. J. Williams†, helper, West Toronto; Sergt. R. F. Wilson*, yardman, Winnipeg; Lance-Corp. P. H. Witney*, wiper, Moose Jaw; Pte. J. Wright, fireman, Fort William; Second Corp. W. R. Wright, brakeman, B.C. District; Sergt. E. Young, specialist, Angus.

Meritorious Medal—Staff Sergt. C. A. Hewett, clerk, Winnipeg.

Marked thus (†) killed in action; (*) wounded.

The G.T.R. Directorate.—A bill introduced in the Senate by Senator E. Lynch Staunton, and which was specially aimed at the G.T.R., providing that no person shall be qualified to be, or shall be elected a director of a railway company in Canada unless he is actually a resident of Canada and remains so during the period of his directorate; that all meetings of directors shall be held in Canada, and that these provisions shall apply after Jan. 1, 1918, was withdrawn when it came up for a second reading, July 13, It was stated that the proposal would be brought up as an amendment to the Consolidated Railway Act when it comes up for consideration.

Transportation Appointments Throughout Canada.

Algoma Central & Hudson Bay Ry.—C. D. RAFFERTY has been appointed Master Mechanic, vice T. Fraser, resigned. Office, Sault Ste. Marie, Ont.

Atlantic, Quebec & Western Ry., Quebec Oriental Ry.—E. LINDSAY has been appointed Assistant Master Mechanic, New Carlisle, Que.

Canadian Government Railways.—F. B. TAPLEY, heretofore Assistant Engineer in Assistant Chief Engineer's Office, C.P.R., Montreal, has been appointed Assistant Engineer of Maintenance, all lines, C.G.R., reporting to the Chief Engineer. Office, Moncton, N.B.

J. J. McLEOD, heretofore first trick dispatcher, has been appointed Chief Dispatcher, New Glasgow, N.S., vice K. Stewart, whose appointment as Assistant Superintendent there was announced in our last issue.

J. DAVIDSON, heretofore Instructor of Interlocking Rules, Campbellton, N.B., has been appointed Chief Dispatcher there, and his former position has been abolished.

J. H. BRASSARD, heretofore Chief Dispatcher, Riviere du Loup, Que., has been appointed Chief Dispatcher, Levis, Que., and his previous position has been abolished.

J. H. DUFF, heretofore acting Assistant Superintendent, has been appointed Assistant Superintendent, District 2, Western Lines, and his previous position has been abolished. Office, Grant, Ont.

D. W. STEEPER, heretofore acting Assistant Superintendent, has been appointed Assistant Superintendent, District 3, Western Lines, and his previous position has been abolished. Office, Graham, Ont.

R. KING, heretofore acting Superintendent, has been appointed Superintendent, District 3, Western Lines, and his previous position has been abolished. Office, Fort William, Ont.

C. R. MACKENZIE, heretofore General Superintendent, Transcontinental Division, Cochrane, Ont., has been appointed General Manager's Assistant, Western Lines, Winnipeg.

H. K. GOODWIN has been appointed Local Treasurer, Western Lines, Winnipeg.

E. B. HAGARTY has been appointed Local Auditor, Western Lines, Winnipeg.

W. J. AMOR has been appointed Superintendent of Car Shops and Yards, Western Lines, vice J. L. Hodgson, General Car Foreman, deceased. Office, Transcona, Man.

W. D. STEWART has been appointed General Storekeeper, Western Lines. Office, Transcona, Man.

Canadian Northern Ry. — A. L. SPROULE, heretofore machinist, Winnipeg, has been appointed Locomotive Foreman, Neepawa, Man., vice W. Gibb, transferred.

N. J. LOWES has been appointed station ticket agent, Regina, Sask., vice R. J. Burland, enlisted for military service.

R. CROSBY, heretofore Car Inspector, Blue River, Sask., has been appointed Car Foreman, Moose Jaw, Sask.

W. GIBB, heretofore Locomotive Foreman, Neepawa, Man., has been appointed Locomotive Foreman, Radville, Sask., vice W. Bryce, transferred.

A. LYDON, heretofore Car Inspector, Prince Albert, Sask., has been appointed Car Foreman, Radville, Sask.

G. R. STEEVES, heretofore machinist, Saskatoon, Sask., has been appointed Locomotive Foreman, Hanna, Sask., vice A. T. Hannah, who has left the service.

W. BRYCE, heretofore Locomotive Foreman, Radville, Sask., has been appointed Locomotive Foreman, Kipling, Sask., vice H. Mann, resigned.

F. J. MYERS, heretofore chief clerk to General Superintendent, Central Division, Winnipeg, has been appointed Trainmaster, North Battleford, Sask.

J. E. GILES, heretofore machinist, has been appointed Locomotive Foreman, Lucerne, B.C., vice F. G. Flesher, transferred to Port Mann, B.C., and since resigned.

Canadian Pacific Ry.—C. W. STOKES, heretofore Assistant Publicity Agent, Department of Natural Resources, Calgary, Alta., has been appointed Assistant General Publicity Agent, Montreal.

A. E. GOUGH has been appointed Chief Dispatcher, Farnham, Que., vice O. M. Lavoie.

J. H. BARBER, heretofore Resident Engineer, Toronto Terminals, has been assigned to the Construction Department, and has charge of the double track construction between North Toronto and Leaside. Office, North Toronto.

H. R. H. SILCOX, heretofore transitman, Trenton Division, Toronto, has been appointed acting Resident Engineer, Toronto Terminals, vice J. H. Barber, transferred.

W. THOMAS has been appointed Car Foreman, White River, Ont., vice J. Flynn, who has been transferred to the Car Department, London, Ont.

C. GRIBBIN, heretofore Master Mechanic, Toronto, has been appointed Master Mechanic, Algoma District, vice T. Hambley, who has been acting temporarily. Office, North Bay, Ont.

T. HAMBLEY, who has been acting as Master Mechanic, Algoma District, North Bay, Ont., has been appointed Division Master Mechanic, Sudbury Division, Algoma District, vice W. Wells, transferred. Office, Sudbury, Ont.

W. WELLS, heretofore Division Master Mechanic, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed Division Master Mechanic, Schreiber Division, Algoma District, vice F. Grant, transferred. Office, Schreiber, Ont.

J. W. KEPPEL, heretofore Locomotive Foreman, North Transcona, Man., has been appointed Locomotive Foreman, Kenora, Ont.

A. J. PENTLAND, heretofore Locomotive Foreman, Souris, Man., has been appointed Locomotive Foreman, North Transcona, Man., vice J. W. Keppel, transferred.

JOHN NORTON has been appointed Locomotive Foreman, Souris, Man., vice A. J. Pentland, transferred.

J. A. McGREGOR, Superintendent, Edmonto Division, Alberta District, Edmonton, is acting General Superintendent, Alberta District, during the absence of J. M. Cameron in Alaska. Office, Calgary.

W. H. WORTMAN has been appointed acting Superintendent of Shops, Ogden, Alta., during the absence of A. T. Shortt, due to ill health.

S. F. PIERCE, heretofore acting Manager, Royal Alexandra Hotel, Winnipeg, is reported to have been appointed Manager, Palliser Hotel, Calgary, Alta., vice E. H. Godwin, resigned.

J. W. JACKSON, heretofore Locomotive Foreman, Kamloops, B.C., has been appointed acting Division Master Mechanic, Cranbrook Division, British Columbia District, vice W. H. Wortman, transferred to Ogden Shops, Ogden, Alta. Office, Cranbrook, B.C.

W. SMALL, heretofore acting Shop Foreman, Revelstoke, B.C., has been appointed Locomotive Foreman, Kamloops, B.C., vice J. W. Jackson, promoted.

Chicago, St. Paul, Minneapolis & Omaha Ry.—EDWARD A. DYE has been appointed General Agent in charge of freight and passenger traffic in British Columbia, west of Field, including C.P.R. lines, Nakusp to Kaslo, and Gerard to Lardo, and the position of Travelling Agent, Vancouver, B.C., has been abolished. Office, 905 Dominion Building, Vancouver.

Delaware & Hudson Co.—W. J. MULLIN, General Traffic Manager, Albany, N.Y., is dealing with all matters hitherto handled by M. J. Powers, General Passenger Agent, who has been granted leave of absence for active military service with the U.S. Army.

H. T. RUHL, heretofore Division Engineer, Canadian Government Railways, Moncton, N.B., has been appointed Engineer, Maintenance of Way and Structures. Office, Albany, N.Y.

Grand Trunk Ry.—D. J. McCUAIG, heretofore acting Master Mechanic, has been appointed Master Mechanic, Ontario Lines. Office, Toronto.

W. C. TOMKINS has been appointed Local Treasurer for lines west of Detroit and St. Clair Rivers, vice G. W. Alexander, resigned. Office, Detroit, Mich.

F. A. RUTHERFORD, heretofore Trainmaster, District 26, Battle Creek, Mich., has been appointed Trainmaster, Districts 27 and 28, Detroit Division, vice N. P. North, assigned temporarily to other duties. Office, Durand, Mich.

Grand Trunk Pacific Ry. — T. P. WHITE, heretofore Car Service Agent, has been appointed Superintendent of Car Service, and his former position has been abolished. Office, Winnipeg.

Michigan Central Rd.—G. H. WEBB, Chief Engineer, having been commissioned as Lieutenant Colonel, Sixth Regiment Reserve Engineers, U.S., for service in France, J. F. DEIMLING, heretofore Assistant Chief Engineer, has been appointed acting Chief Engineer. Office, Detroit, Mich.

G. H. HARRIS has been appointed acting Assistant Chief Engineer, Detroit, Mich.

Quebec Ry., Light, Heat & Power Co.—See Electric Railway Department, pg. 327.

Union Pacific System.—J. J. ROSE, heretofore Canadian Passenger Agent, has been appointed General Agent. Office, 53 Yonge St., Toronto.

Bilingual Trainmen for Quebec Province.

In the debate on the bill to amend and consolidate the Railway Act, in the House of Commons, July 18, H. Boulay, Rimouski, Que., proposed an amendment to sec. 302, sub. sec. 2, to the effect that all employes coming in contact with the travelling public shall understand both official languages. The subsection as it now stands provides for printing timetables in English and French, for use on

railways within the limits of the Province of Quebec. It was urged that there was considerable difficulty on trains in Quebec where trainmen could speak English only, but the amendment was objected to on the ground that it would compel railways to employ men speaking both languages on every train, not only on those operating entirely within the province, but also on those passing through any portion, however small, of the province. The Minister of Railways stated that so far as the Intercolonial Ry. was concerned, he might accept the proposal for trains running in the Province of Quebec, but it was a different matter for other railways running trains out of Montreal, to Ottawa, Toronto, etc., and he could not accept it to apply to interprovincial or international trains.

Later in the day, on the motion of the Minister of Railways, the section was amended by the following addition: All railway employes on local passenger trains running in the Province of Quebec having to deal with the travelling public, shall be conversant with the English and French languages, from and after Jan. 1, 1919.

Freight and Passenger Traffic Notes.

The Board of Railway Commissioners has ordered the C.P.R. to stop train 172 at Oakville, Ont., to pick up passengers for Toronto, and has ordered the G.T.R. to stop train 106 at Oakville for passengers for Toronto and points beyond.

In last month's issue, in referring to the Toronto, Hamilton & Buffalo Ry. sleeping car service from Hamilton, Ont., to Pittsburg, Pa., the time of the train leaving Hamilton was given as 8.23 p.m., instead of 8.13 p.m.

The British Columbia Government has authorized the Canadian Northern Ry. to operate a workman's train between New Westminster and Port Mann daily, without paying the usual tolls for the use of the provincially owned bridge over the Fraser River.

The Canadian Northern Ry. reports that up to June 1, covering the first three-quarters of the present crop year, it had handled 58,477 cars of grain originating in Manitoba, Saskatchewan and Alberta. This, it is said, represents 30.4% of the total handlings of all railways in Canada, and is an increase of 1.6% over its own handlings for the same period of the 1915-16 crop year.

In connection with the removal of rails from portions of the Grand Trunk Pacific Ry. in the Rocky Mountain District, for shipment to France, the company says some of these rails will be replaced by steel taken from the adjacent Canadian Northern Ry. line, and in some cases the Grand Trunk Pacific Ry. trains will be operated over the C.N.R. grade. There will thus be a considerable length of railway which will be operated as a joint section. As the work proceeds there will doubtless be certain adjustments in the original plan, and consequently only this preliminary advice is given so that all concerned will understand that the operation of G.T.P. trains will continue over the joint section the same as under previous conditions. G.T.P.R. terminals at Jasper and Edson will still be used.

The Grand Trunk Pacific Ry. started operating a through service from Watrous to Prince Albert, Sask., June 24. A passenger train is run from Watrous on Tuesdays, Thursdays and Saturdays, and from Prince Albert on Mondays, Wednesdays and Fridays. A mixed train is run from Watrous on Mondays, Wednesdays and Fridays, and from Prince Albert on Tuesdays, Thursdays and Saturdays.

The Reid Newfoundland Co. has announced that it will endeavor, as far as possible, to forward all freight routed in its care at North Sydney via at that port, but it will reserve the right, whenever circumstances require it, to forward freight originally routed via North Sydney, via Louisburg, collecting extra charges over the North Sydney rate for additional haul North Sydney to Louisburg, and also the right to forward freight by steamship from North Sydney or Louisburg to St. John's direct or Newfoundland ports other than Port-aux-Basques.

Prevent Car Shortage by Filling Cars.

Canadian Railway & Marine World has already published bulletins 1 and 2, issued by the Eastern Lines management, C.P.R., and which appealed more especially to shippers. The officials who have been carrying on the campaign have visited most of the large shipping points in the country, but of course shippers are often unable to load cars fully, because they cannot ship the consignees more freight than is ordered. A third bulletin has, therefore, been prepared, addressed to consignees, and is being distributed from the company's general offices, through its local officers and through station agents. The company has also offered to supply shippers with as many copies as they wish for distribution amon copies as they wish for distribution among their customers. In this connection it may be mentioned that on the Eastern Lines, C.P.R., the cars are being loaded 8% heavier than last year. Bulletin 3 is as follows:

"NOTICE TO CONSIGNEES

"The railways solicit your co-operation in their endeavor to provide all their patrons with a satisfactory freight car supply. Consignees can help by ordering full carloads. Many consignees never order more than the minimum authorized under the tariffs and classification. The result is an economical waste which reduces the efficiency of the railways and the public suffers. To increase the average car loading by one ton, would be equivalent to placing 10,960 additional freight cars in service in Canada. To fully load cars would go a long way towards solving our transportation difficulties. We realize that some consignees cannot always order full carloads, but they are requested to help by ordering in as large units as possible. A car saved is a car gained. The difference between minimum loads and full loads of certain standard commodities is given herewith:

"Flour shipped in 214 lb. barrels; minimum load, 210 bbls.; 1 30 ton car will hold 300 bbls. A 40 ton car will hold 315 bbls. 98 sacks; minimum load, 459 sacks; 3 30 ton car will hold 673 sacks; a 40 ton car will hold 900 sacks.

"Sugar shipped in 100 lb. sacks; minimum load, 300 sacks; a 30 ton car will hold 660 sacks; a 40 ton car will hold 940 sacks.

"Cement shipped in 87½ lb. sacks; minimum load, 457 sacks; a 30 ton car will hold 754 sacks; a 40 ton car will hold 1,074 sacks.

"Nails shipped in 107 lb. kegs; minimum load, 280 kegs; a 30 ton car will hold 616 kegs; a 40 ton car will hold 878 kegs.

"Consignees can help by promptly releasing cars. To most consignees such an appeal is unnecessary—they do not delay cars under load. There are others, however, who appear to be satisfied if they release cars in what is known as "free time." Again, there are others who hold cars in storage service for weeks, and such consignees are largely responsible for car shortages and terminal congestion. A recent check of cars placed for unloading and held by consignees at some of the stations on one of the railways showed 700 cars delayed an average of 12 days. Had these cars been released within even 5 days they would have made nearly 1,400 trips, and would have handled about 35,000 tons of freight. 2,615 other cars unloaded within 3 days could have been placed for delivery on the tracks occupied by these 700 delayed cars to earn demurrage, but want them employed in carrying freight. A rolling car gathers no demurrage.

"If consignees will order freight from shippers so as to increase the average loading by 5 tons per car, and if they will reduce the average delay in unloading by 24 hours, it will prevent car shortages. In co-operation there is efficiency."

Railway Construction in Alberta in 1916.

The Alberta Railways Department annual report for 1916 shows that the provincial guarantee has been attached to bonds providing for the construction of 2,656.97 miles of railway, on which 1,706.78 miles of steel had been laid, and 417.85 miles of additional grading completed at Dec. 31, 1916. There were laid 132 miles of rails on provincially guaranteed lines during 1916, and the C.P.R. laid 11 miles in the province, making a total mileage of 143 miles of new track. The lines include the Lacombe & Blindman Valley Electric Ry., on which 37 out of 39.1 miles of grading have been completed, but upon which no track has been laid. The other lines belong to three systems, the Canadian Northern Ry., the Grand Trunk Pacific Ry., and the McArthur lines. Under the Canadian Northern charter 774.8 miles are guaranteed, of which 503.8 are completed; while under the Canadian Northern Western Ry. charter 662.57 miles are guaranteed and 264.67 miles are completed. These two lines have also 248.15 miles of grading completed and ready for track laying. Under the Grand Trunk Pacific Ry. charter 259.5 miles were guaranteed, and this was all completed in 1915. The three McArthur lines show: Of the 471 miles guaranteed on the Edmonton, Dunvegan & British Columbia Ry., 407 miles have been completed, and an additional 54.19 miles was ready for track laying Dec. 31, 1916; of the 350 miles guaranteed on the Alberta and Great Waterways Ry., 212.5 miles have been completed and 78.5 miles of grading were completed Dec. 31; of the 100 miles guaranteed on the Central Canada Ry., 49 miles of rails had been laid. Of the total mileage guaranteed 74% was either in operation or ready for track laying.

The total mileage of railways in the province at Dec. 31, 1916, was 4,566, distributed as follows: Canadian Pacific, 1,920 miles; Canadian Northern, 1,250; Grand Trunk Pacific, 707; McArthur lines 689.

Electric Railway Department

The Toronto Suburban Railway's Guelph Extension and Other Lines.

Previous to 1914 the Toronto Suburban Ry. had in operation in the City of Toronto and York Tp. 9.92 miles of single track, comprising three distinct lines and a short branch line. The three principal lines were respectively, from the corner of Keele and Dundas Sts., in West Toronto, along Dundas St. to Lambton Mills, from Keele and Dundas Sts. to Church St., Weston, and from Keele St., along St. Clair Ave. and Daveport Rd. to the subway under the C.P.R. on Bathurst St. The branch line leaves the Dundas St.-Lambton line at Gilmour Ave. and runs south to Evelyn Crescent. In 1912, contracts were let to the Suburban Construction Co. for the extension of the Weston line to Woodbridge, 7.9 miles, and from Lambton Mills to Guelph, 46.3 miles. Ewen Mackenzie was given subcontracts for all work, except buildings and overhead line, on the Weston-Woodbridge extension, and for the grading, bridging, fencing, etc., of about 41 miles of the Lambton-Guelph line, and the tracklaying St., where it runs through the G.T.R. subway. Where the line is on private right of way, the sharpest curve, with two exceptions, is 10 degrees, and the steepest grade 2%. The exceptions are at the point where the line leaves the road allowance for a private right of way, where there is a 12 degree curve, and at a sharp bend in the Humber River, at mileage 7.1, where a 15 degree curve had to be used to avoid the necessity of diverting the river. For the first three miles the grade is undulating, following the valley of the Humber River until, after crossing the west branch of the river, it rises 80 ft. in a little over a mile to a summit nea rthe Albion Road. Thence the grade falls for another mile to the Humber River, which it follows to Woodbridge village.

Cuttings were made 20 ft. wide and embankments 14 ft. Culverts, where small openings were required, are of concrete or corrugated galvanized iron pipe. Larger culverts and cattle passes are of used as a passing siding.

The overhead line is of trolley construction, 2/0 copper trolley wire, on poles spaced 100 ft. apart, and 8 ft. clear of centre line. The feed wire is of aluminum, equivalent to 4/0 copper wire. There is one substation on this line, at Thistletown, built of brick with stone trimmings and tar and gravel roof.

The Guelph extension, generally known as the Lambton-Guelph line, leaves the Dundas St. line at the top of the hill on the east side of the Humber River, where it enters on private right of way and continues thereon throughout. After passing through Lambton Park, the Humber River is crossed at an elevation of 82 ft. above the water level; thence paralleling the C.P.R. for 0.8 mile to near Mimico Creek, the line curves sharply to the left, and reversing, crosses Mimico Creek and runs under the C.P.R. at the latter's bridge over Mimico Creek. The line then rises on a short stretch of 2% grade to and through Islington village,

Toronto Suburban Railway, Lambton yard, showing the switches and Y.

Toronto Suburban Railway, Lambton yard and car barn.

and ballasting of all of this line, excepting the part lying east of the west bank of the Humber River, 0.6 mile. The grading and bridging of this 0.6 mile were done by the Lewis Construction Co., and the tracklaying and ballasting by the Suburban Construction Co. The grading on the westerly five miles was done by Chas. Cook & Co., and the tracklaying and ballasting, as above stated, by Ewen Mackenzie. At the same time that the work was going on, the Suburban Construction Co. did considerable work on the improvement of the city lines, particularly the Dundas St.-Lambton line.

The Weston-Woodbridge line, commencing on Main St., Weston, at its intersection with Church St., runs northerly on Main St. half a mile to beyond the under crossing of the G.T.R.; thence for another half mile the track is on the road allowance, but on the west side next to the fence, so that it does not interfere with the roadway. The balance of the line is on private right of way. The line, where it is on the street or road allowance, has necessarily to conform to the roadway, grades and alignment. The maximum grade of this part is 3% and the sharpest curve is 20 degrees, which is rendered necessary at the turn in Main cedar box construction. The principal bridges are of steel, on concrete abutments and piers, as follows: Mileage 1.6, Humber River, 1-24 ft., 1-60 ft., 1-90 ft. deck plate girders. Mileage 2.7, West branch of Humber River, 2-45 ft. through plate girders. Mileage 3.1, creek, 24 ft. I beams. There is also one frame trestle on this line. All bridges are designed for Class 2 loading, Department of Railways & Canals specification.

The track is laid with 60 lb. A.S.C.E. rail, rolled by the Algoma Steel Co., with 4 bolt angle bar splices, on ties spaced 17 to 33 ft, rail length. Surfacing was done with material from shoulders and side ditches. The right of way is 66 ft. wide, fenced throughout with no. 7 wire woven fence on posts spaced 25 ft. centres. Gates are of iron frame construction, covered with woven wire. There are two small shelter stations at Thistletown and Albion Road respectively, and one larger frame station at Woodbridge. Passing sidings are provided at the north end of Weston and at Thistletown and Albion Road, in addition to which there is a siding at Woodbridge. There is also a spur about three-quarters of a mile long, leading to a material yard on the C.P.R., a mile north of Weston, which is sometimes after which it parallels Dundas St. for 4 miles, excepting for a mile at Summerville, where it swings to the north, in order to get an easier grade down to the Etobicoke River valley, and, swinging back, a crossing under Dundas St. is obtained. Leaving Dundas St. at mileage 6, the line then runs for three-quarters of a mile through level fields and then parallels the C.P.R. for about a mile and a half to beyond Cooksville. There it strikes northwesterly on a rising grade and 4½ miles further on passes over a summit 200 ft. higher than Cooksville and thence descends to the valley of the Credit River, which is crossed at Meadowvale, mileage 15.3. The C.P.R. is crossed underneath, at mileage 15.9. The Credit valley is then followed through Churchville and Huttonville villages, at which latter point the line again rises out of the valley until it reaches the meadow land on the higher ground, which it follows, passing Norval village on the top of the hill at mileage 22.4. The west branch of the Credit River is crossed, at mileage 23.4, on a timber trestle, 70 ft. high, west of which there is located the longest tangent on the line, which extends to Georgetown, mileage 26.0. The West Credit River is again crossed at that point, on a

timber trestle, and Water St. is crossed overhead on a steel span. The only level highway crossing in Georgetown is Main St., on which the station is located. West of Georgetown the lines rises along the slopes of the Credit River valley, and at mileage 26.7 crosses under the G.T.R.'s Hamilton and North Western Branch. Thence the line rises almost continuously, passing through the limestone quarries at Limehouse and Dolly Varden to a summit immediately west of the latter point and reaches Acton at mileage 32.7. At that point the line runs through the Beardmore tanneries yards and crosses a G.T.R. spur in the yard at grade. The station is on Main St. West of Acton, the line passes through a somewhat swampy country and reaches its highest summit one mile west, where the track elevation is 755 ft. higher than at Lambton Jct. It then descends into the country tributary to Speed River's Eramosa branch, following Blue Springs Creek to the junction of the latter with the Speed, and then for the most westerly five miles close to the Speed itself. The grade on the last 12 miles is generally slightly undulating, with a total drop of 130 ft. between the summit, west of Acton ,and Guelph. This western part of the line is generally through a limestone country and although there are good farms but a short distance away, the land immediately adjoining the railway is generally barren or covered with scrub brush.

The construction standards of this line are similar to those of the Weston-Woodbridge line, but the location is to a higher standard, there being very much less curvature and it was altogether a more expensive line to build. The principal bridges, which, with the exception of the Humber River bridge, were designed for class 2 loading of the Department of Railways & Canals specifications, are generally of steel and concrete, with a number of frame and pile trestle bridge at the less important streams. The principal bridges are as follows:

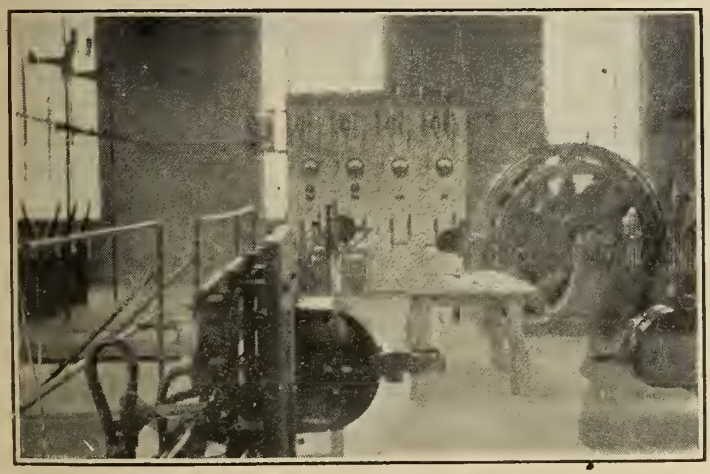
Humber River bridge, mileage 0.6. Total length, 711 ft.; maximum height above bed of stream, 86 ft. Commencing at the east end there is 209 ft. of frame trestle on mud sills, with a maximum height of 55 ft. This trestle ends on a high pier, which also supports the end of the first steel span. The balance of the bridge is of deck plate girder construction on steel trestle towers. The spans, commencing at the east end, are: 95 ft. 2 in., 40 ft. 4 in. tower; 95 ft. 4 in., 40 ft. 4 in. tower; 95 ft. 4 in., 40 ft. 4 in. tower; 85½ ft.

The easterly pier is of somewhat unique construction. It is 55 ft. from the ground to the bridge seat and the bridge seat is 14 ft. x 7½ ft. in plan. End batters are 1 in 24 and side batters 1 in 18. In order to lessen the concrete quantities, an opening 30 ft. high and 5 ft. wide, was left in the pier from front to back, and commencing 7 ft. above the footing. As the slope of the embankment comes against the back of the pier, 35 ft. above the footing, a counterfort was built on each side of this opening. These counterforts are each 3 ft. wide, and commence at the face of the pier, 24 ft. above the footing. They are battered out 1 in 4, giving them a thickness or projection beyond the neat work of 4 ft. 8 in. at the top of footing. The land tower is supported on 4 pedestals of ordinary construction 6 ft. square on top, with side batters of 1 in 6. The river towers each rest on two piers, which are carried full size, 39½ ft. x 6 ft., to above high water, from whence they are carried up an additional 4 ft. in the form of pedestals at each end of the pier. There is a 90 degree cut water on each end of each pier. The west abutment is on the slope of the hill, immediately west of the river, and is of ordinary wing construction. All piers and pedestals are founded on solid rock. The west abutment is on stiff clay foundation, in which no piling was necessary. The steel work of this bridge was designed for class heavy loading of the Department of Railways and Canals specification.

Mimico Creek bridge, mileage 1.8, 80 ft. through plate girder, on concrete piers and abutments, 14 ft. from bed of stream to base of rail. This bridge is in a bad location, owing to the angle at which it crosses the stream, and to the sharp curvature of the track. In order to ease the flow of the stream, the river was widened on the east side, and protected with a sheet pile bulk head for 180 ft. up stream from the bridge. A short bulk head was also built on the down stream side of the east abutment and the banks on both sides were further protected with heavy rip rap. Both abutments are founded on gravel, in which no piling was necessary.

Toronto Suburban Railway, Humber River Bridge.

Toronto Suburban Railway, typical trestle construction, west fork of Credit River.



Toronto Suburban Railway, Georgetown substation, interior.

Toronto Suburban Railway, standard shelter.

Etobicoke River bridge, mileage 5.0. Two 50 ft. through plate girders on 2 concrete abutments and 1 pier. Bed of stream to base of rail 12 ft. Both abutments and pier are on solid rock foundation.

Dundas St. overhead bridge, mileage 5.4. Reinforced concrete construction. Two abutments supporting slab on which the road is carried. Clear span 16 ft., at right angles to centre line of railway. Bridge on 47 degrees skew. Clear height, top of rail to trolley wire, 16 ft.

Dixie Creek, mileage 6.1. Timber trestle on mud sills 165 ft. long. Maximum height 23 ft.

Creek, mileage 10.3. Timber trestle on mud sills 35 ft. long. Maximum height 7 ft.

Creek, mileage 14.2. Timber trestle on crib piers. 90 ft. long. Maximum height, 20 ft.

Credit River, mileage 15. 3. Three spans through plate girders, one 40 ft. and two 80 ft. The 40 ft. span is over an old tail race, and is supported on 2 concrete abutments. The two 80 ft. spans are over the main river and are supported on 2 concrete abutments and 1 pier. Bed of stream to base of rail 12 ft.

C.P.R. crossing, mileage 15.8. The C.P.R. is crossed underneath, and an I beam bridge, on concrete abutments, was built to carry the C.P.R. track. The width at right angles to the Toronto Suburban Ry. track is 16 ft. in the clear, and the clear height 15 ft.

West Credit river, mileage 23.3. Timber trestle, partly on mud sills, and where in the stream on crib work piers; 315 ft. long, with a maximum height of 64 ft.

West Credit River, mileage 25.8. 410 ft. timber trestle on piles. Maximum height above bed of stream 32 ft. This trestle is extended on the west, with a 3 span I beam bridge on 2 abutments and 2 pairs of pedestals, to carry the railway over Water St., Georgetown. This bridge consists of 2-16 and 1-24 ft. spans, giving a clearance above the roadway of 14½ ft.

G.T.R., mileage 26.7. The G.T.R. Hamilton & Northwestern branch is crossed underneath and a bridge of I beams, on concrete piers, with a clear span at right angles to the Toronto Suburban Ry. of 16 ft., was built to carry the G.T.R. track. Clearance from rail to trolley wire under the bridge 16 ft.

West fork of west branch of Credit River, mileage 28.1. Timber trestle 270 ft. long, on mud sills, and where in the river on timber cribs. Maximum height, 45 ft.

Limehouse Creek, mileage 29.3. Pile trestle 180 ft. long. Height above bed of creek 8 ft.

Mileage 30.8. Frame trestle, 180 ft. long, on mud sills, over Toronto Lime Co.'s at Dolly Varden Mine. Total height, 13 ft.

Creek, mileage 31.3. Pile trestle 60 ft. long. Maximum height, 17 ft.

Creek, mileage 32.8. Frame trestle on piles 75 ft. long. Maximum height 18 ft.

Fairy Lake, mileage 33.3. Pile trestle 180 ft. long. Maximum height, 14 ft.

Blue Springs Creek, mileage 35.4. Pile trestle 75 ft. long. Maximum height 8 ft.

Blue Springs Creek, mileage 40.3. Pile trestle 75 ft. long. Maximum height, 8 ft.

Speed River, mileage 41.3. 80 ft. through plate girder on concrete abutments. Bed of stream to base of rail 10 ft. Abutments are founded on coarse gravel, in which no piling was necessary.

Speed River, mileage 43.4. 80 ft. through plate girder on concrete abutments. Bed of stream to base of rail 10 ft. Abutments founded on coarse gravel and boulders.

The track is laid with 60 lb. A.S.C.E. section rail rolled by the Algoma Steel Co. anl laid on jack pine and hemlock ties, 17 to the rail length. Generally, continuous joints were used, but there are a few miles also of ordinary 4 bolt angle bars. There is throughout 6 in. of good gravel ballast. Main line switches are laid with no. 7 frogs, with the exception of Lambton and Guelph Y tracks, in which no. 5 frogs were used. Yard switches and tails of Y have no. 5 frogs.

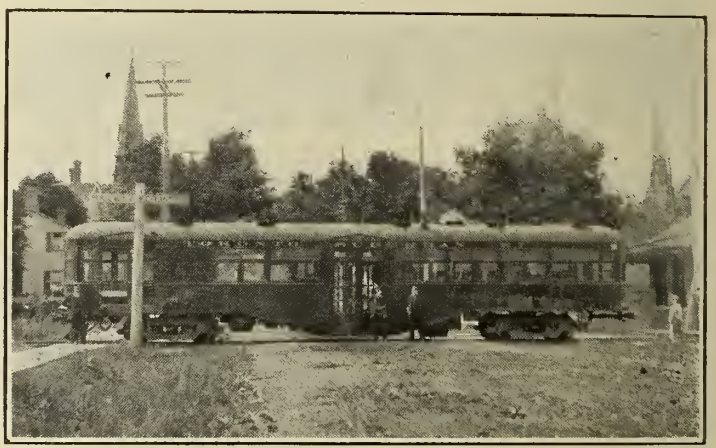
At Lambton there is a yard in connection with the car barn, and at the same point there is room for considerable additional trackage. Passing sidings are provided at Eaton farm, Summerville, Dixie, Cooksville, Huronbrow St., Streetsville, Meadowvale, Churchville, Huttonville, Norval, Georgetown, Dolly Varden, Acton, Blue Springs, Eden Mills and Eramosa. There are Y's at Lambton, Cooksville, Georgetown and Guelph. The Y's are all laid with curves of 100 ft. radius, with the exception of the east leg of the Georgetown Y, which is 130 ft. radius. Guard rails are used on all of these sharp curves. There is a yard at Guelph, with room to handle a considerable amount of freight.

Shelter stations have been built at Islington, Eaton Farm, Summerville, Cooksville, Huronview St., Streetsville, Meadowvale, Churchville, Norval, Limehouse and Eden Mills, and platforms at Lambton, Dolly Varden, Blue Springs, and Eramosa. At Georgetown a brick station of neat design, with waiting room, office and baggage room, was built adjoining the substation. At Acton there is a 2 story frame station 18 x 24 in plan, with waiting room, office and baggage room downstairs, and living rooms upstairs. At Guelph, pending the construction of a better station, there is a platform adjoining the track, and across the street from this platform, a stone building is being used for station purposes. This building has a large waiting room, an office and an express room downstairs and 4 good sized living rooms upstairs.

There is a large car barn at Lambton, which was fully described and illustrated in Canadian Railway and Marine World for May, 1916, in which there are in addition to the car storage space, inspection, repair, machine, paint, and blacksmith shops, boiler room, coal store, offices and lavatories. It is the intention to put up a 2-car barn at Guelph, construction of which will commence immediately.

There are three sub-stations, at Islington, Georgetown and Guelph respectively. The Islington one is a frame building, covered with galvanized, corrugated iron; the Georgetown one is of brick, attached to the passenger station, and the Guelph one is also of brick. The high tension supply is from the Toronto Power Co., 12,000 volts, 3-phase, 25-cycle, although all the high tension wiring is installed to meet 35,000 volt standards, as the voltage of the supply will later on be raised to 25,000 volts. The Islington and Guelph substations each have one 500 kw. rotary installed, and the Georgetown substation has two of these rotaries. Each rotary converter receives its energy supply from 3 H.P. 25-165 kva.-12,500/25,000 volts to 965 volt oil-cooled, single-phase transformers. These transformers have four 2½% reduced capacity taps in the primary, and 50% starting taps in the secondary. The rotary converters are rated T.C.C. 4-500 k.w.-750 r.p.m.-1,500 volt, compound-wound commutating pole. The converters receive 3-phase energy, at 965 volts, from the transformers, and deliver 1,500 volt direct current to the trolley. The converters are equipped with brush raising mechanism for starting. Each substation is protected against lightning by an aluminum cell lightning arrester, and is provided with the standard arrangement of choke coils, disconnecting switches and oil switches on the high tension side. The switchboard panels are of natural black slate, the instruments having a dull black finish. The K-21-25,000 volt automatic oil switches are provided

Toronto Suburban Railway, Georgetown station and substation.



Toronto Suburban Railway, combination passenger and baggage car at Georgetown.

with series relays. The rotary starting panels are located near the rotary converters, and are separate from the main switchboard. In addition to the main lightning arresters, aluminum surge protectors are installed directly across the armatures of each of the rotaries. The operation of the substations is proving very satisfactory, the design of the rotary converters permitting very heavy momentary overloads without injurious sparking. The complete electrical equipment was built by Canadian General Electric Co., at its Peterborough works.

The contact system.—In general the side bracket type of catenary construction is employed; 25,000 volt high tension transmission is carried on the same poles; also the feed wire, the telephone and signalling system. The standard pole spacing on tangents is 150 ft. More than 30% of the main line mileage is curved track, and on account of this the pole spacing varies according to the curvature. The standard pole length for construction is 35 ft.; for transmission and catenary 40 ft. Local conditions, such as crossing of railways, telephone and telegraph and public highway, increase these lengths.

The details of the material used in supporting the contact system are along standard lines, some modifications having been made to meet local conditions. All pole line hardware is either galvanized or sherardized. The messenger cable consists of 7/16 in. high standard steel strand, 90,000 lb. per sq. in., supporting a 4/0 standard grooved trolley wire. Five-point catenary construction is used with 23 in. deflection. A 4/0 feed wire is run all along the line and tapped into the trolley every half mile. The contact system is anchored every half mile, on tangents, and against a curve at both ends. The line is sectionalized at all substations, and where the voltage changes from 1,500 to 600 volt. The high tension transmission consists of 3-phase, 25 cycle, 115,000 C/M copper cable and is supported on a buerrow bracket construction. All along the line is a 5/16 in. ground wire, protecting the line from lightning and grounded every half mile. Three types of bonds have been used, one brass welded, one gas welded and one electric welded bond. The track is cross bonded with a 4/0 copper cable every half mile; also cross bonded on the intersections and switches. The entire electrical installation was designed and constructed by the company's own engineering staff.

This line between Lambton and Guelph was opened for operation on April 14 of this year. The passenger cars were described in Canadian Railway & Marine World in March, 1916, and May, 1917.

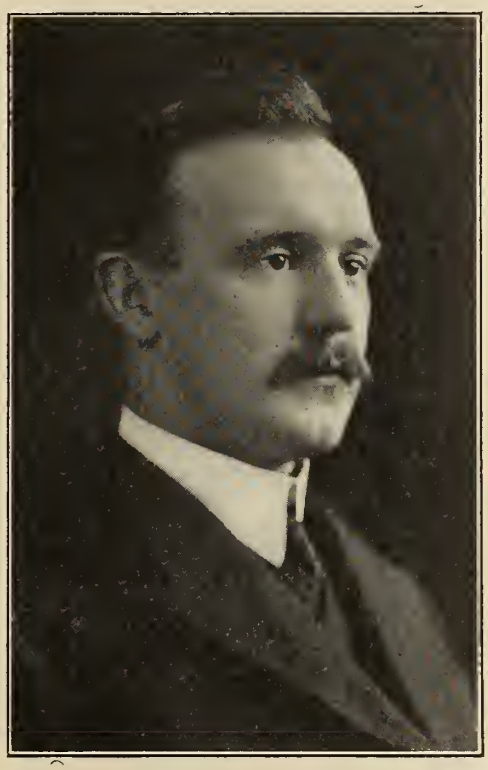
The present daily passenger service consists of 2 cars each way between Toronto and Guelph, 1 additional car between Toronto and Georgetown, and 5 additional cars each way between Toronto and Cooksville. The Sunday service consists of 2 cars each way between Toronto and Guelph, 2 cars each way between Toronto and Georgetown, and 1 each way between Toronto and Cooksville.

On the lines in Toronto last year, the track on Dundas St., from Keele St. to Gilmour Ave., and on Keele St. for 500 ft. north of Dundas St., making a total distance of 4,500 ft., was relaid with a 93 lb. grooved girder rail 7 in. high. This year the switches have been renewed with heavier steel, on Dundas St. at Gilmour Ave., near Mavety St., and on the Davenport line at the Y. At the junction with the Weston line at the corner of St. Clair Ave., and Keele St. This is preparatory to running the interurban cars into the city.

For the foregoing information, photographs, etc., we are indebted to H. T. Hazen, M.Can.Soc.C.E., Chief Engineer, and T. Malm, Electrical and Mechanical Engineer.

The Death of H. G. Matthews.

H. G. Matthews, General Manager, Quebec Ry., Light, Heat & Power Co., died at the Jeffrey Hale Hospital, Quebec, July 4, following an operation for intestinal tumor. He had been in poor health for some months and was unable to attend the Canadian Electric Railway Association's annual meeting in Montreal early in June, but he went to his office nearly every day until June 28. On June 29 he was taken to the hospital and was operated on on July 3, when it was found that gangrene had set in, affecting the main blood arteries of the intestines. He died the following morning. The removal of his body from his house to the station



The Late H. G. Matthews

at Quebec was attended by over 100 motormen and conductors in uniform, and representatives of many local clubs, societies and public bodies. The funeral took place at Mount Royal Cemetery, Montreal, July 6, and was attended by the President of the company, Sir Rodolphe Forget, several directors and other friends, including representatives of the Montreal Tramways Co. and the Montreal Light, Heat & Power Co.

Mr. Matthews was born at Montreal, July 1, 1878, and educated at the Montreal High School. After being with the Marconi Wireless Telegraph Co. of Canada from Dec. 1903 as Sec.-Treas., and from Oct. 1908 also as General Manager, he entered Quebec Ry., Light, Heat & Power Co.'s service in Aug., 1911, as Assistant to the President. In Jan., 1912, he was also appointed General Manager. He was also President, Lotbiniere & Megantic Ry. Co., and a director of all the subsidiary companies of the Q.R.L.H. & P.Co. He was a member of the Garrison Club, the Quebec Board of Trade, the Quebec Golf Club, a director of the Y.M.C.A., and also a member of the executive and legislation committees of the Canadian Electric Railway Association. He was unmarried, and is survived by his mother, one sister and one brother.

Reported Offer of Sale by British Columbia Electric Railway.

The Mayor of Vancouver stated recently that at one of the conferences during the British Columbia Electric Ry. employes' strike, G. Kidd, General Manager, said the company was willing to sell out its entire system on the mainland, and on Vancouver Island. The mayor's statement was that the company suggested that the B.C. Government purchase the company's hydro electric power plants on the mainland and on Vancouver Island, as well as the interurban lines, viz., the Saanich, Chilliwack, Lulu Island and Steveston lines, and the line between Vancouver and New Westminster, and that Victoria, Vancouver, North Vancouver and New Westminster take over the various local systems within their respective boundaries. The idea is that the cities would purchase power at a fixed rate from the government owned and government controlled plants. General Manager Kidd is reported as saying that the company would be willing to accept provincial bonds and city issues of debentures at a reasonable rate of interest in payment for the properties. The price reported to be set on the various properties is said to approximate $30,000,000. The proposition is reported to have been unofficially laid before the city councils of Vancouver, Victoria and New Westminster and to have been received with favor. No action will be taken by either body unless a definite proposition is made. Nothing has been said as to any offer having been made to the B.C. Government.

Mr. Kidd, in an interview, stated that such an offer had been made in general terms. The plan was one that would require special legislation to allow of the transfer of charter privileges and permit the three cities concerned to carry out the line of procedure outlined. But if all three cities signified their willingness to do their share in the plan, and passed recommendations to the provincial government to that effect, he thought the government would be sure to look upon the matter favorably and the necessary financing would be satisfactorily arranged.

Toronto Ry. Pape Ave. Extension Delayed.—At a hearing by the Ontario Railway and Municipal Board, July 13, as to why the Pape Ave. extension ordered by the board had not been carried out by June 1, both the company and the city declared that the reason the work was not completed was that it was impossible to get either T or girder rails. The rails were on order, but it was not expected that delivery could be obtained until the autumn. The board considered that everything possible had been done, and enlarged the order to Sept. 14.

Edmonton Municipal Ry. and other Public Utilities' Results. In publishing some information in this subject in our July issue, page 287, it was, owing to an error in typewriting, which was not discovered in proof reading, stated that "A. G. Davidson, City Commissioner," had supplied the matter. The City Commissioner is A. G. Harrison.

Toronto Railway Overcrowding Case Decided.

The Judicial Committee of the Imperial Privy Council has allowed the Toronto Ry.'s appeal against a conviction at Toronto assizes, Nov. 2, 1914, for criminal negligence in overcrowding cars and for not taking reasonable steps to avoid such nuisance. The action was originally taken against the company at the city's instance under the Public Health Act. This matter has been before various courts in Canada for at least 6 years, a conviction having been obtained for a similar offence in 1911. At intervals some feeble attempts have been made to remedy the overcrowding, which is admitted by the company, but in no case has the proper remedy been applied, or even attempted, and as, without doubt, the city has the remedy in its own hands, it may be given as an unprejudiced opinion that the city does not intend that the trouble should be obviated, but rather that it should be aggravated chiefly for the purpose of influencing public feeling during the expiring years of the company's franchise. Apart from this is the feeling among a certain class of people, and especially so when the final decision does not favor their views, that cases should not be taken to the Imperial Privy Council for decision, it being contended that it is impossible for the Judicial Committee to judge correctly, not being in touch with local opinion. There is no doubt that there is sufficient legal ability in Canada to enable all appeal cases to be decided on this side, but the main safeguard in appeals to the Privy Council is, in reality, the fact that cases are taken there for decision on legal points alone, where local opinion should have no effect whatever, and of which, of course, the Judicial Committee is entirely ignorant. The history of this case alone is sufficient to prove that local opinion and feeling on the matter of overcrowding had its effect in each court in which the case was brought. The contention for the defence, that the courts had no jurisdiction to deal with the matter under the Public Health Act, but that it was entirely within the province of the Ontario Railway and Municipal Board, being ignored. It was mentioned in one of the appeal hearings in the First Divisional Court, Torontot, Oct. 13, when it was held that the courts had jurisdiction, and that the contention of the company might hold good as between the company and private persons, but not between the Crown and the company. The decision seems absurd, when the complainant is the City of Toronto, which does not represent the Crown, and even though prosecution is under indictment by a grand jury, it is not, of necessity, a Crown prosecution. On the other hand, the Ontario Railway and Municipal Board, by virtue of its authority from the Ontario Government, does represent the Crown, and its powers to deal with the case have time and again been pointed out on the company's behalf.

Under clause 38 of the agreement between the city and the company, the City Engineer is required to decide as to the carrying capacity of the various cars operated by the company, and on May 4, 1895, the then City Engineer recommended to the City Council, who adopted the same, that the carrying capacity of closed cars be limited to 50% above their seating capacity, allowing a space of 18 in. on the seat for each person; that open cars be limited to their seating capacity, and that notices should be placed in the cars giving the number of passengers each was entitled to carry. No attempt seems to have been made to enforce the city's bylaw, but early in 1915 the company drafted a bylaw on precisely similar lines, and submitted it to the Ontario Railway and Municipal Board for approval. This was approved by the Board, on the understanding that it be redrafted, and that the company adopt a device to show when the cars were full, the bylaw not to be operative until a date to be fixed. The Vice Chairman of the Board, A. B. Ingram, dissented, and stated that in his opinion it was utterly impossible to carry out the bylaw, unless the company made alterations to its rolling stock. Immediately following the company's submission of its bylaw, the city council repealed its own bylaw worded similarly, and decided to oppose the application.

Other steps taken with the view of eliminating overcrowding, included some new designs of cars. Various types were tried, but as none of the types carried more passengers than those now in use, nothing was gained. Additional cars were suggested and ordered, but as additional trackage is blocked by the city, there is naturally a limit to the number of cars which can be added. There are at least three things which have interfered to a great extent in carrying out a proper method of dealing with the trouble: the war, the destruction of a number of cars by fire at the company's barns, and the fact that the franchise expires in March, 1921 and that the city has declared its intention of taking over the system.

The jurisdiction of the Ontario Railway and Municipal Board to deal with the complaints, is now unquestioned, but to remedy the evil it would require considerable expenditure, not only by the company, but also by the city, and the Board's Chairman stated recently that under existing circumstances it would be distinctly unfair to compel the company to expend large sums on new equipment, etc., There are several ways in which overcrowding evils may be lessened, if not removed, but as there appears up to the present, no disposition on the part of the city to have the matter handled properly, or to co-operate with the company, it is probable that the evil will continue.

The Privy Council's judgment is not to hand at the time of writing, but dispatches state that the company's appeal was allowed and the conviction quashed.

Suit against Sandwich, Windsor & Amherstburg Ry.—The Ontario Court of Appeals gave judgment at Toronto, July 4, in the action of the Windsor City Council against the S. W. & A. Ry. in reference to the Ferry Ave. loop. The city sued for damages for trespass on Ferry Ave. and injury thereto from excavations, for costs of filling such excavations, injunction and declaration that defendants have no rights upon said streets, without bylaw assented to by electors authorizing same. At the trial, April 27, 1916, judgment was given plaintiffs for $900 damages and costs, with declaration and injunction as asked. The Court of Appeals has upheld the judgment in all respects, except as to the $900 damages. Each party pays its own costs of the appeal.

Sudbury-Copper Cliff Suburban Electric Ry.—We are officially advised that the company has under construction at Sudbury, Ont., a car barn 50 x 115 ft., and a station building 20 x 30 ft.

Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—We are officially advised that in May last the Victoria City Council, on the company's application, authorized the laying down of 420 lin. ft. of second track, paralleling the existing single track on Esquimalt Road, between Catherine and Mary Sts. The linking up of this short stretch will make a complete run of double track from the city to Constance Ave., a little over three miles. The company's right of way over this portion of Esquimalt Road had long been in dispute, and was finally settled by an order of court. (July, pg. 286.)

International Transit Co.—We are officially advised that the company proposes to relay 1,720 ft. of track in Sault Ste. Marie, Ont., in advance of city permanent improvements.

Lake Erie & Northern Ry.—We are officially advised that the overhead construction necessary to operate the company's cars into the Grand Trunk Ry. station at Port Dover, Ont., has been completed, and that since July 9, the cars run over about half a mile of the G.T.R. tracks. This enables the company to have a connection with the wharf at Port Dover. Negotiations to secure this connection were started in March, and plans had been prepared, in the event of their not being successful, for the company to build its own line on St. Patrick St.

Ottawa Electric Ry.—We are officially advised that the company is about to relay track on Sussex St., from Rideau St. to St. Patrick St., Ottawa, 1,600 ft., with 80 lb. T rail. The city will renew the paving at the same time. Work is expected to be started at once.

Port Arthur Civic Ry.—Plans are reported as being prepared by the City Engineer, for the erection of two new bridges over the McIntyre River, Port Arthur, Ont., one for each track. They will, it is said, be of timber construction, as there is a remote possibility that the track may be diverted to May St. The existing bridges are not considered adequate and cars are operated over them at the rate of two miles an hour. It is not expected that any construction will be done on the bridges before September. (May, pg. 203.)

Sherbrooke Power & Ry. Co.—The City Council is applying to the Quebec Public Utilities Commission to consider and settle various matters which are in dispute between the council and the company. The city contends that the company is not living up to the terms of its franchise in regard to street paving and other matters. (May, 1916, pg. 194.)

Toronto Civic Ry.—Tenders were received July 19 for building a single track extension to the Bloor Division, from Quebec Ave. to Runnymede Road. The contractor is to provide all track and overhead work, ballasting, grading, alterations and additions to existing track, and to supply two single truck cars. Only one tender was received for the track, including secondhand T rails and second quality ties, for $7,655; or as an alternative, for $2,500, if the city supplies rails, bolts, spikes and the plates. The work is to be completed in 20 days from the start.

Montreal Tramway Co.'s Wages.—The M. T. Co.'s management voluntarily increased its conductors' and motormen's wages 2c an hour all round, from July 1.

British Columbia Electric Railway Employes' Strike.

We have been favored with the following statement in reference to the recent strike of the British Columbia Electric Ry. Co.'s carmen and the causes which led to it:

The employes were working under an agreement entered into by the Amalgamated Association of Street and Electric Railway Employes of America and the company on Sept. 16, 1916. This agreement was supplementary to an unexpired agreement between the same parties, which was executed on Sept. 1, 1915, providing for certain schedules of pay for the employes who were members of the association. In view of the increased cost of living the company voluntarily offered the men certain increases, which resulted in the supplementary agreement above mentioned, although the agreement of Sept. 1, 1915, was not due to expire until "six months after the cessation of the war, provided that the period for which the agreement shall continue shall not be less than 12 months nor more than 22 months from that date." In view of the revised agreement, the period of the contract was extended to June 30, 1918, or at the expiry of six months after the close of the war, whichever date came first. Under that agreement conductors and motormen received the following wages per hour: 1st year, 27c; 2nd year, 29c; 3rd year, 31c; 4th year, 33c; after 4th year, 35c. Conductors and motormen on interurban lines received 1½c an hour in addition to the above rates. In the early part of May, the men governed by the agreement mentioned above made a demand through their union for an additional increase in wages. As the men's demands were too much for the company to consider, a counter offer was made them of a war bonus as follows: 15% increase to men receiving up $60 a month; 10% to men receiving more than $60, and not more than $70 a month; 5% to men receiving more than $70, and not more than $80 a month. The men refused to accept this offer, but modified their original demand and asked for increases as follows: For trackmen, 27c an hour for the first 6 months, and after that 35c; a minimum wage of 35c an hour after 6 months service in all departments; all men on a monthly salary to receive an increase of $10 a month; conductors and motormen on city and suburban lines, car repairers, etc., 1st six months, 27c an hour; next 18 months, 35c; 3rd year, 36c; 4thyear, 38c; 5th year and after, 40c; conductors and motormen on interurban lines to receive 1½c an hour in addition.

The men voted to strike when the company refused to meet these demands, and as a consequence no cars were operated on June 13 in Vancouver, North Vancouver and New Westminster and on the interurban lines between Vancouver and New Westminster, known as the Central Park and Burnaby Lake line. The following day the men on the Victoria lines, and the Saanich interurban line, on Vancouver Island, ceased work. The service on the company's other interurban lines, the Lulu Island and Fraser Valley branch, continued to operate, as the trainmen working on these divisions are members of the Brotherhood of Railway Trainmen, and are not associated with the Amalgamated Association, but as the rolling stock on these lines was maintained by members of the Amalgamated Association, the company was forced to suspend operations on the Lulu Island line on June 17, and to reduce the service on the Fraser Valley branch from 3 car trains to single car operation. The equipment on these lines had been looked after since the beginning of the strike by the foremen, but the company was notified by the Electrical Workers Union that it considered this a breach of the arrangement whereby the company promised not to employ strike breakers, and in order to give the electrical workers no excuse for ceasing work and jeopardizing the light and power service of the district, it removed these foremen from maintenance work, and as a result of being unable to keep the rolling stock on these divisions in proper repair, the operation on the Lulu Island line ceased.

The company considered that the offer it had made of war bonuses was adequate for the increase in the cost of living, and moreover the company's revenue would not permit the payment of the increases demanded and the continuation of operation.

On the Vancouver and Victoria city systems a fare of 4 1/6c is charged, while in North Vancouver and New Westminster, which are separate systems, a straight 5c fare is charged. On the interurban lines liberal concessions in the form of books of tickets have been made by the company from time to time, and on many of the suburban lines on the city system of Vancouver similar reductions of fare have been granted. These arrangements and agreements were entered into several years ago, on the strength of the traffic carried on the shorter city lines. Since Dec., 1914, the revenue which the company expected to receive from these shorter rides has been seriously depleted by jitney competition. When the strike occurred, about 150 jitneys were operating on the paved car line streets in Vancouver. The jitneys limited their operations to the paved streets and car line streets, and also the short hauls, and did not give transfers, consequently a much larger proportion of the long non-paying hauls was imposed upon the company. The City of Vancouver has passed certain regulations respecting jitneys, but these had no effect upon the number operating.

After the street cars had ceased operation for several days, the Retail Merchants Association took action and passed a resolution recommending the elimination of the jitney as the first step towards obtaining a resumption of the car service. This resolution brought action by the city council, which invited the company's officials to a conference. The officials told the city councillors that it was not possible to pay the demands of the men while the jitneys were allowed to operate, but as the city wished to receive proof of this statement, it was agreed between the council and the company that the whole transportation situation be investigated by a commission to be appointed by the British Columbia Government. The city council agreed by resolution to put into effect whatever recommendations this commission should make. The company agreed to endeavor to resume operation immediately in the meantime. The company's officials therefore met the union's officials and after negotiations agreed to pay the men their demands, stating that they did so in the interests of the public, and also because they felt assured that the investigation by the commission would relieve the company of many of the onerous burdens under which it now operates, and the operation of the system was resumed provisionally, depending upon the rectification of the economic conditions by a provincial commission. The Provincial Premier invited Prof. Adam Shortt, head of the Dominion Civil Service Commission, to be chairman of the special commission, and Sir Robert Borden has agreed to allow Professor Shortt leave of absence to undertake the work.

Adam Shortt, who was appointed commissioner as above mentioned, arrived in Victoria, July 10, and had a conference with the Attorney General and other members of the government, representatives of the municipalities interested and B.C.E.R. officials as to the scope of the enquiry. The commissioner held his first sitting at Vancouver, July 13, when the B.C.E.R. was represented by G. Kidd, General Manager; W. G. Murrin, Assistant General Manager; V. Laursen, Solicitor, and W. Saville, Comptroller. The municipalities interested and the jitney league were also represented. After preliminaries had been settled the investigation was adjourned to July 16, when the taking of evidence was begun. The enquiry is expected to last some time.

Winnipeg Electric Railway Suburban Fares.

The Manitoba Public Utilities Commission has issued an order fixing fares from Winnipeg to Kildonan Park. For traffic between any point in Winnipeg and Templeton Ave. in Kildonan, which is the terminus for service to Kildonan Park, the rate shall be as follows: Single cash fares to be 5c each from any point in Winnipeg to Templeton Ave., or from Templeton Ave. or any point south to any point in Winnipeg, with a transfer if required. Provided that tickets shall be sold as follows: White tickets, good at all times, 6 for 25c. Red tickets, good going north, on Sundays and other days, within the hours specified for use of same, but only good going south on Sundays, 8 for 25c. Tickets for school children to be used only on school days, and for the purpose of attending school, 10 for 25c. Children under five years of age, when accompanied by parents or guardians to be carried free.

A Manitoba court, on July 12, granted the Winnipeg Electric Ry. and the Winnipeg, Selkirk & Lake Winnipeg Ry. authority to appeal against the decision above mentioned, but refused to grant a stay of proceedings as against the order. The effect of this is that the new fare schedule becomes operative at once, while the appeal against it cannot be argued until September.

Accident on the Niagara Gorge Ry.—Owing to heavy rains a portion of the track was undermined about 50 ft. south of the cantilever bridge above the whirlpool rapids, Niagara Falls, July 1, and a car with from 50 to 60 passengers was precipitated into the river. Some disagreement has occurred as to the number of passengers actually on the car, and missing, but it has been accepted that 10 were killed and 31 injured. It is feared that the bodies will not be recovered from the whirlpool, although at times some of them have been seen. One was recovered July 11. An enquiry has been held.

Mainly About Electric Railway People.

Mrs. H. W. Mills, widow of the former Manager of the Sarnia St. Ry., died in Sarnia, Ont., June 26.

George Scott, who has been in the company's service in various capacities for several years, has been appointed Superintendent, Moncton Tramways, Electricity & Gas Co., Moncton, N.B., vice A. B. Coryell, resigned to go into the moving picture business in Buffalo, N.Y.

William J. Lynch, who has been appointed General Manager, Quebec Ry. Light, Heat and Power Co., Quebec, Que., was born there, June 17, 1882. He entered the Montmorency Electric Light Co.'s service as a clerk in 1897, and in 1900, when the company was amalgamated with the Quebec, Montmorency and Charlevoix Ry., he was appointed cashier, from 1905 to 1907 he was accountant; 1907 to 1909, Treasurer, and from 1909, when the various properties comprising the Quebec Ry. Light, Heat and Power Co. were consolidated, he has been Treasurer and Comptroller.

Albert Eastman, who has been elected Vice President Canadian Electric Railway Association, was born in Bosanquet Tp., Ontario, Aug. 21, 1870. He entered transportation service in 1889, and was to 1891, operator, Michigan Central Dd.; 1892 to 1900, freight and ticket clerk and operator, G.T.R., Detroit, Mich.; 1901, assistant agent, Michigan Central Rd., Detroit, Mich.; 1901 to Nov., 1902, Travelling Express and Passenger Agent, Detroit United Ry.; Dec. 1902 to May 1903, General Express Agent, Utica and Mohawk Valley Ry.; May to Nov. 1903, Division Superintendent, Detroit United Ry.; Nov. 1903 to Nov. 1907, Superintendent of Employment, Public Service Corporation of New Jersey; Nov. 1907 to May 1910, General Express and Passenger Agent, New York State Railways, Syracuse and Utica, N.Y.; May 1910 he was appointed General Manager, and in 1914, also Vice President, Windsor, Essex and Lake Shore Rapid Ry., Kingsville, Ont., which position he still holds.

Duncan McDonald, who has been selected to represent the Toronto Ry. on the board of conciliation appointed under the Industrial Disputes Investigation Act, to deal with the matters between the Toronto Ry. and its employes, was born at St. Thomas de Montmagny, Que., June 17, 1859, and removed to Montreal in 1875. He entered Montreal St. Ry. service in 1881, as a driver, in order to acquire a thorough knowledge of street railway work from its very commencement. He was soon changed to conductor and after about a year in that capacity, was appointed roadmaster. In 1886 he severed his connection with the company and engaged in other business. Anticipating the progress that the trolley system would make, he went to St. Paul and Minneapolis, Minn., in 1889, and secured a practical knowledge of electric railways. He returned to Montreal in 1892 and re-entered Montreal St. Ry, service as inspector, and in 1894 was appointed Superintendent of Transportation, which position he held until 1898, when he resigned to become General Manager, Parisian Tramways Co. Paris, France, in which position he organized the Parisian system to a high degree of efficiency. In 1903 he returned to Montreal, having been offered the position of Manager, Montreal St. Ry., which position he held to Nov. 1910, when he was appointed General Manager, and on the organization of the Montreal Tramways Co., in 1912, he was appointed General Manager of the new company, resigning in July, 1912, since when he has devoted his time to his other interests, including the Montreal Tunnel and Terminal Co., the Prepayment Car Sales Co., of which he was President, and which controls the pay as you enter car, of which he was one of the patentees, and also the pay within car. He is a directer of the Dominion Park Co., the Automobile Club of Canada, a member of the Civil Engineers Society of France, a member of the Institution of Electrical Engineers of England, and was connected with the Canadian Street Railway Association, now Canadian Electric Railway Association, from its inception until his retirement from actual street railway service, being President for two years and member of the executive committee for several years. For two years he was a city controller of Montreal, and was an unsuccessful candidate for the mayoralty at the last election.

A. Eastman,
Vice President and General Manager, Windsor, Essex, & Lake Shore Rapid Railway

Duncan McDonald

Earle L. Milliken, Manager, Cape Breton Electric Co., Sydney, N.S., who was elected a member of the Canadian Electric Railway Association's executive committee at its recent annual meeting, was born at Bideford Me., May 15, 1888, and was educated at Springfield Technical High School and the University of Maine, whence he graduated in 1908 with the degree of B.S. in electrical engineering. During the summers from 1903 to 1908, he engaged in various work, respectively as follows: General electric work, Westbrook Electric Light & Power Co., Westbrook, Me.; in the brass department, Coffin Valve Co., Mepouset, Me.; in tool making department, Chapman Valve Co., Indian Orchard, Mass.; rodman, Maintenance of Way, Bangor & Aroostook Rd.; in machine shop, Portland Co., Portland, Me., and on inventory work, South Massachusetts Telegraph and Telephone Co. From Sept. to Nov., 1908, he was engaged in Stone & Webster's statistics department, Boston, Mass., and entered the service of the Cape Breton Electric Co., which is managed by Stone & Webster, Nov., 1908, since when he has been, to Oct., 1909, clerk to Manager; Oct., 1909, to Feb., 1911, Superintendent of Distribution and Electrical Engineer; Feb., 1911, to May, 1912, Superintendent, Light and Power, and Electrical Engineer; and from May, 1912, Manager.

Increased Electric Railway Fares in Fort William and Port Arthur.

On Mar. 1 the City Corporation of Fort William and the Public Utilities Commission of Port Arthur, Ont., entered into an agreement as follows: "Whereas the city is operating an electric street railway within the limits of Fort William and the commission is operating an electric street railway within the limits of Port Arthur, subject to certain agreement for a through service of cars. And whereas the said railways are operating at a loss and it is necessary to increase the fares. Now therefore the parties hereto agree as follows: Notwithstanding anything to the contrary in any bylaw or agreement or order in council the fares to be hereafter charged on the said street railway shall be as follows:

"(1) One fare in each city. (2) Regular fare 5c or 6 tickets for 25c, good from 5.30 a.m. until 12 p.m.

"(3) Workmen's fares, 5c or 8 tickets for 25c, good from 5.30 a.m. to 8 a.m. and from 5.30 to 7 p.m., from Monday to Saturday inclusive. Sunday tickets, 8 for 25c, good from 5.30 a.m. to 12 p.m.

"(4) Children's tickets up to 14 years of age, 10 for 25c, good all hours eevry ray of the week, Sunday included. All bona fide students, above 14 years, privileged to use children's tickets, between 8 a.m. and 5 p.m. on school days.

"(5) Fares from 12 p.m. to 5.30 a.m. 10c each, good for a through ride.

"(6) Children under 14 years of age may use school children's tickets on Sunday, be good for through ride."

The Ontario Railway and Municipal

Board met at Port Arthur on June 19 to consider the agreement, and on July 6 recommended to the Ontario Government that the agreement be ratified.

Electric Railway Notes.

The Ottawa Electric Ry. has received one semi steel car, with 33 ft. body, from Ottawa Car Manufacturing Co.

The Toronto Ry. has instructed its motormen that returned disabled soldiers are to be allowed to enter cars by the front doors instead of by the back.

The Edmonton Radial Ry. received tenders recently for the supply of trolley wire, the price being $43.93 per 100 lb. against $16 before the war.

A. Beaudoin, Ottawa station agent, Hull Electric Co., was on July 7 sent for trial before a jury on a charge of converting to his own use $255.45 belonging to the company.

The Premier of British Columbia wrote the Victoria Board of Trade, July 6, that the government had decided to introduce into the legislature next session a bill providing for the establishment of a public utilities commission.

The Winnipeg Electric Ry. is reported to be considering the advisability of reducing the car service on a number of lines in the city and the advisability of operating some of its car in the outlying parts of the city as one-man cars.
complied with.

A United States federal court at Seattle, Wash., on July 12, gave judgment restraining any person from operating a jitney in Seattle without compliance with the city regulations as regards bond, etc. The jitney men state they will not fight the order and the result will be that jitney traffic in the city will cease.

The Sherbrooke St. Ry. is reported to have placed in operation a car of a new design with some special features patented by F. X. Couture, Superintendent. The car has seating capacity for 32, and separate entrance and exit are arranged at each end, both working in conjunction with the steps.

The Sarnia, Ont., police magistrate, on July 12, dismissed a case in which the Sarnia St. Ry. was charged with violating the traffic bylaw by blocking Davis St., at the intersection of Front St., with its cars. The magistrate stated that the proceedings had been instituted with a view of letting the company understand that the provisions of the bylaw must be

The Guelph Ry. management was notified by the Ontario Government, July 10, that it was prepared to make a substantial concession in the rate paid the railway for hauling freight to and from the Agricultural College. The G.R.R. notified the college authorities recently it would cease hauling freight unless granted an increased rate. The government's offer has been accepted.

Of the nearly 450 jitney drivers in Winnipeg, over 300 are members of the Jitney Association, which has offered to the city to back a bond covering claims from $25 to $1,000, on behalf of its members. This offer is made because the association claims the premiums charged by standard companies are too high. The proposal is to be considered by the license committee.

The Mayor of Montreal claims that the commission appointed by the Quebec Legislature to draw up a new franchise for the Montreal Tramways Co. should show more energy in its work. The commission has been at work for six months, and although the task it was set demands much research and careful consideration, he is of opinion that it is time for the commission to show results by submitting the details of the new franchise.

The Calgary Municipal Ry. was opened for traffic, July 5, 1909, the system comprising 3 miles of track over which 2 cars were run. On the eighth anniversary the system comprised 47 miles of track over which 78 cars were being operated, all of them on the one-man system. Commissioner Graves is reported to have said the C.M.R. is the only system of the size on the continent successfully operated on the one-man car plan.

Quebec Railway, Light, Heat and Power Co's Appointments.

In consequence of the death of H. G. Matthews, General Manager, the following appointments have been made, the offices in each case being at Quebec, Que.:

W. J. LYNCH, heretofore Treasurer and Comptroller, has been appointed General Manager.

R. A. WILSON, heretofore cashier, has been appointed Treasurer.

H. K. TENNANT, heretofore accountant, has been appointed Comptroller.

J. J. O'BRIEN, heretofore assistant accountant, has been appointed accountant.

C. J. PIGOT, heretofore Maintenance of Way Engineer, has been appointed Chief Engineer.

M. VALLEE has been appointed cashier.

H. MYRAND has been appointed assistant accountant.

Transportation of Postmen in Regina.—As stated in Canadian Railway & Marine World for April, the Regina, Sask., City Council decided, on July 3, by a majority vote, to accept the Post Office Department's offer of $35 a man per year for carrying postmen on the Regina Municipal Railway, instead of $25 as previously paid, although the proposal was strongly opposed by the mayor and three other councillors and had been reported against by the city commissioner. It was decided that the contract be for one year, the postmen only to ride, without paying fares, when on duty and not after 6 p.m. At another meeting of the council on July 3, it was decided, against the mayor's advice, to make a contract with the departsioner has arranged to issue serially numbered tickets, one for each postman, so as to try and prevent a greater number riding than the Department pays for.

Dynamiter Sentenced.—M. J. Herlihy, financial secretary of one of the Amalgamated Association of Street and Electric Railway Employes' Divisions, in New York, was sentenced recently to from 10 to 20 years imprisonment for participating in the attempt to destroy an uptown subway station, by dynamite, during the transit employes' strike in October last.

Toronto & York Radial Ry. Wages.—The T. & Y.R.R. increased its motormen's wages $10 a month on July 1, making them as follows: 1st year, $70; 2nd year, $75; 3rd year and after, $80. These rates are for a 10 hour day.

Toronto Civic Ry. Employes' Wages.—The Board of Control h—as under consideration, the matter of some increases in the wages paid to employes on the Toronto Civic Ry.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.—The percentage paid to the city of Vancouver in respect of the street railway traffic for June was $2,309.34, compared with $3,121.94 for June, 1916. The number of passengers carried during June was 1,708,429, about 500,000 less than in June, 1916, and about 860,000 less than in May, 1917. There was a strike throughout the system for 9 days during June.

British Columbia Electric Ry. and allied companies.

	May, 1917	May, 1916	11 mths. to May 31,'17	11 mths. to May 31,'16
Gross	$438,919	$414,215	$4,952,727	$4,662,300
Expenses	366,190	351,385	3,910,597	3,864,917
Net . .	72,729	62,830	1,042,130	797,383

Cape Breton Electric Co.—

	May, 1917	May, 1916	5 mths. to May 31,'17	5 mths. to May 31,'16
Gross	$36,029.83	$30,278.31	$174,883.55	$148,438.10
Exp.	25,167.11	20,035.76	110,453.33	96,040.08
Net	10,862.72	10,242.55	64,430.22	53,098.02

Edmonton Radial Ry.—

Total revenue for May	$39,416.77
Operating expenses	36,432.85
Net operating revenue	2,973.92
Capital charges and depreciation	21,070.73
Loss . .	$18,096.81

The International Ry., Buffalo, N.Y., which operates the Niagara Falls Park and River Ry., in Canada has been authorized by the New York Public Services Commission to issue $1,500,000 of its refunding and improvement 5% bonds of 1912, to pay for extensions and improvements and additional rolling stock, and to refund $25,000 car trust certificates due in 1917. The company plans to purchase 55 new cars and improve present equipment.

Nelson St. Ry. (Municipal) earnings for 6 months ended June 30, $6,997.39; expenditure, $7,220.74; deficit, $223.35. The earnings show an increase of over $600 above those for the six months ended June 30, 1916.

Sherbrooke Power & Ry. Co.—It is reported that negotiations are in progress between the company and the Sherbrooke, Que., City Council for the purchase by the latter of the company's electric railway. The chief point at issue is the price, which the council contends is too high.

Toronto Civic Ry.—Receipts for June, $22,716.29, against $18,142.72 for June, 1916. Receipts for six months ended June 30, $139,974.33, against $107,116.36. Passengers carried in June, 1,342,062, against 1,078,600 for June, 1916.

Toronto Railway:

	1917	City percentage	1916	City percentage
Jan. . .	$510,053	$ 76,508	$473,784	$69,847
Feb. . .	473,184	70,976	470,704	70,614
Mar. . .	531,080	105,857	518,555	97,237
Apr. . .	510,334	102,066	496,172	99,234
May . .	510,870	102,174	500,515	100,103
June . .	499,732	99,946	467,086	93,417
	$3,035,253	$557,527	$3,926,816	$530,452

Toronto Ry., Toronto and York Radial Ry. and allied companies.—

	May. 1917	May. 1916	5 mths. to May 31,'17	5 mths. to May 31,'16
Gross .	$992,460	$903,924	$4,889,055	$4,450,708
Expenses	516,164	446,050	2,545,293	2,299,125
Net . .	476,296	457,874	2,343,762	2,151,583

Winnipeg Electric Ry.—Gross earnings for May, $259,793.83; net after operation, $64,144.67; net after fixed charges, $3,856.26.

	May, 1917	May. 1916	5 mths. to May 31,'17	5 mths. to May 31,'16
Gross . .	$259,794	$276,980	$1,419,144	$1,446,788
Expenses	195,649	173,703	1,032,911	903,851
Net . .	64,145	103,277	386,233	542,937

The Toronto Railway Employes' Strike.

Following a demand served on the company for an increase of 10c an hour in wages, and some changes in general working conditions, the Toronto Ry. employes struck work at midnight, July 10, certain night cars completing their schedules and returning to the barns at 5.30 a.m., July 11.

The agreement under which the men had been working, was entered into July 12, 1915, and was for 2 years from June 16, 1915. The rates of pay per hour being as follows:

Motormen and conductors—1st year, 23½c; 2nd year, 25½c; 3rd year and after, 27½c; Sunday work 4c an hour in excess of week day rate.

Shed men, foremen, 27½c; assistants, 24½c; car washers, 23½c; motor and truck repair men, 1st year, 23½c; 2nd year, 25½c; 3rd year and after, 27½c. On Nov. 1, 1916, although the agreement had 7½ months to run, the company, on account of cost of living, etc., voluntarily increased the wages 2½c an hour, except to car washers, who were advanced 1½c.

Some weeks prior to the expiry of the two years agreement negotiations took place as to a new agreement, but owing to the absence of officials, etc., the matter was somewhat delayed. At a mass meeting of employes, July 8, it was resolved that a demand be made for an all round increase of 10c an hour, with time and a half for work on holidays, and this was sent, and 48 hours given for consideration. The company's management after considering the demand, replied that it could not accede to it, but offered an increase of 2c an hour as a war bonus, which with the voluntary increase of 2½c an hour, and 1½c an hour to car washers would make increases of 4½c and 3½c respectively over the rates provided in the expiring agreement. In the event of this offer not being accepted, the company offered to arbitrate the matter, either under the Industrial Disputes Investigation Act, or before an independent board, and to abide by the decision.

A final meeting of employes took place at midnight, July 10, when after several futile efforts had been made to bring the parties together, the men decided to reject the company's offer, and also declined to arbitrate, the vote for a strike being almost unanimous. An international union official who was present announced that the union's constitution provided for arbitration, but that the matter rested with the men themselves. If, however, they declined arbitration, the international union could not, in the face of the provisions of the constitution, countenance the strike.

On the application of the Mayor of Toronto, the Ontario Railway and Municipal Board intervened, on July 11, and A. B. Ingram, Deputy Chairman of the Board endeavored to bring the parties together, suggesting to the company that it pay, and to the men that they accept, an increase of 5c an hour, pending investigation. This attempt at settlement failed, and it was later announced that the board intended giving the company notice that unless the service was restored within a certain time, it would take hold of the system and operate it pending settlement. It was also stated that a "street railway expert" had been engaged to manage the system, and that he was in Toronto ready to take hold. The question as to whether the Ontario Railway and Municipal Board has the necessary power to operate the system under the conditions which existed, is an interesting one. A careful reading of the Ontario Railway and Municipal Board Act does not show that the board has such power, except possibly by inference, but it is almost impossible to see that any such inference can be drawn correctly from any of the clauses in the act covering the board's jurisdiction or powers to enforce its orders.

On July 12 some members of the Ontario Government met the company's General Manager, and after considerable negotiating, the company announced its willingness to pay an increase of 6c an hour until the differences were settled by an arbitration board. This was submitted to a meeting of the men at midnight, July 12, and was accepted, the men agreeing to arbitration under the Industrial Disputes Investigation Act. It was also agreed that car service was to be resumed as soon as possible, and this was done on July 13, at noon. Subsequently the men appointed D. A. Carey, of the Toronto Telegram, as their representative on the board, and the company appointed Duncan McDonald, formerly General Manager, Montreal Tramways Co., as its representative. These two representatives failed to agree on a third party to act as chairman, so the Minister of Labor appointed Judge Snider, of Hamilton, Ont., July 26.

The dislocation of business, caused by the interruption of the service, was considerable, vehicles of all kinds being requisitioned for the carrying of passengers from outlying points. Jitneys naturally reaped a harvest, as all regulations respecting their operation were temporarily suspended.

It was announced, July 12, that the Mayor of Toronto had communicated with the company, advising that he intended taking action against it for the loss of revenue, being percentage of receipts of the railway, owing to its non-operation, and that the claim would be based on an average of $20,000 a day. It is not known if this is intended seriously or not. He showed his hostility to the company in various other ways and undoubtedly seriously complicated the whole situation.

The position adopted by the employes apparently brings them under the operation of the Industrial Disputes Investigation Act, chap. 20 of 1907, clauses 56 and 59, where it is provided that it shall be unlawful for any employer to declare or cause a lockout, or for any employe to go on strike, on account of any dispute, prior to or during a reference to a board of conciliation and investigation under the provisions of the act, provided that nothing in the act shall prohibit the suspension or discontinuance of any industry or of the working of any persons therein for any cause not constituting a lockout or strike, and provided also that nothing in the act shall be held to restrain any employer from declaring a lockout, or any employe from going on strike in respect of any dispute which has been the subject of reference under the provisions concerning railway disputes in the Conciliation and Labor Act. It is also provided that any employe who goes on strike, contrary to the provisions of the act, shall be liable to a fine of not less than $10, nor more than $50, for each day or part of a day that he is on strike, and any person who incites or encourages or aids in any manner, any employe to go or continue on strike, contrary to the provisions of the act, shall be liable to a fine of not less than $50, nor more than $1,000.

Transportation of Postmen at Reduced Rates Prohibited in Nova Scotia.

The Nova Scotia Board of Public Utilities gave the following decision on June 14 in re Cape Breton Electric Co., Ltd., re transportation of postmen at reduced fares:

"This matter is brought to the attention of the board by a letter from the company, requesting the opinion of the board as to the legality of a practice, for some time prevailing, by which special priced tickets for car fares on the company's tramway are issued to mail carriers. The tickets are issued in books containing 100, the price per book being $3, and each ticket entitling a mail carrier in uniform to one ride. The lowest rate charged to all other customers is 5c a trip.

"This company was incorporated by chap. 130 of the acts of 1900. By rule 8 of schedule A to that chapter, which is incorporated with the act and is to have the force of law, the minimum rate of a single fare is to be 5c. The Public Utility Act prohibits any discrimination in rates and no authority or legal sanction for the rate under consideration has been suggested. Such being the case the board is of the opinion that the special rate is contrary to both the company's act of incorporation and the provisions of the Public Utilities Act. The practice referred to must be discontinued."

For several years the Cape Breton Electric Co. sold tickets for postmen, at the special price of $3 per 100, but some months ago notified the Post Office Department that it would discontinue to do so. However, the local postmaster had a considerable stock of the reduced rate tickets on hand and the postmen have been continuing to use them. In view of the decision above quoted it is a question whether their use should not be immediately discontinued.

Regulation of Electric Railway Service in Glace Bay, N.S.

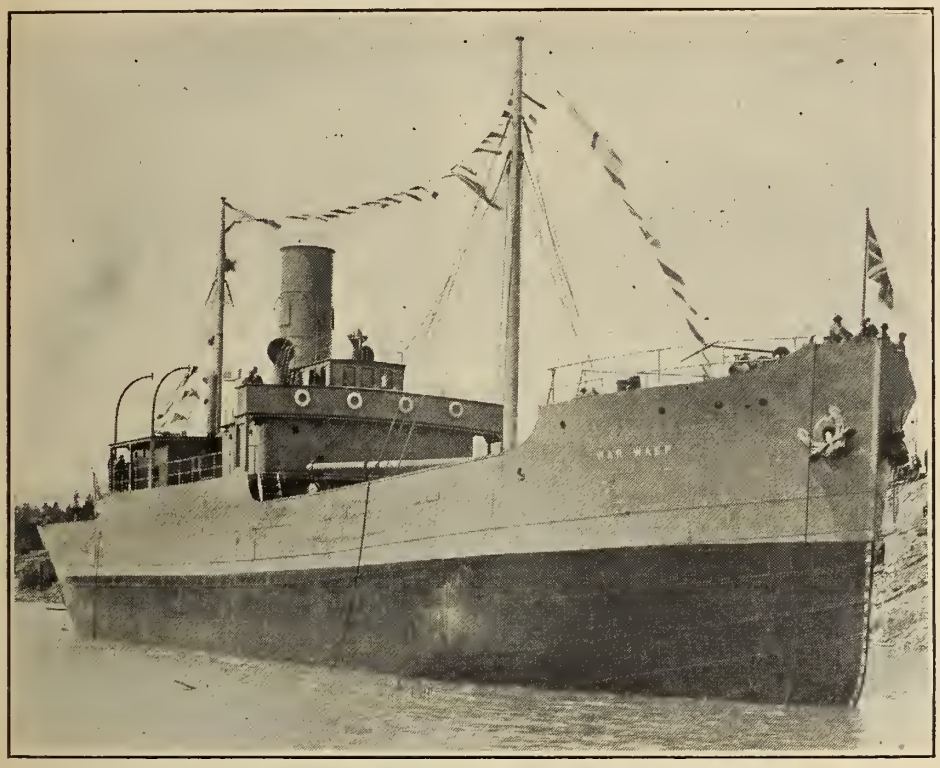
The Glace Bay Town Council has passed an ordinance, providing that no tram passenger car, while operating within the town limits, shall carry more passengers than there is seating accommodation for, and in no event more than 50 passengers. It also provides that the Cape Breton Electric Co. shall, when traffic requires it, place in service a sufficient number of extra cars, following the regular car, to provide comfortable accommodation for all persons desiring to travel on the company's lines, through, from, or to, the town.

The ordinance was passed under the Cape Breton Electric Tramway & Power Co.'s Act of Incorporation, Nova Scotia Statutes, 1900, chap. 130, schedule A, rule 13, which provides as follows: "The municipal council of the County of Cape Breton, and the councils of the incorporated towns and the towns to become hereafter incorporated, shall have power to make such other rules and regulations as may in their judgment be necessary for the safety and comfort of their citizens, and to impose such penalty for the breach thereof as they may deem proper."

Marine Department

Nova Scotia Steel and Coal Co's Shipbuilding Operations.

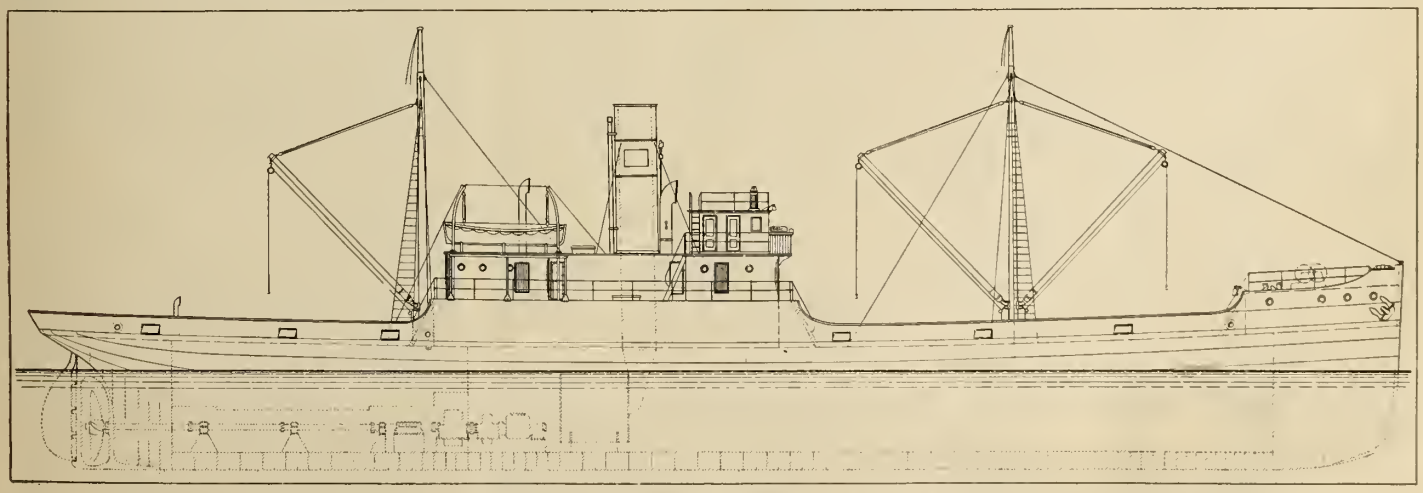
In May, 1916, the Nova Scotia Steel & Coal Co. began building a small cargo steamer primarily intended for its coasting trade. A site on the East River, near the plant of its subsidiary, the Eastern Car Co., was selected. This site is an admirable one, as during the past few years considerable dredging has been done, which when completed during this present year, will make the river navigable for large ocean going vessels. Naturally, a considerable amount of pioneer work was necessary. The site was cleared, buildings erected, a berth laid, and a capable staff organized, the keel of the vessel being laid early in the autumn of 1916. This vessel has several unique features. The principal dimensions are: Length over all, 230 ft.; length between perpendiculars, 220 ft.; molded depth, 20 ft.; beam, 35 ft. Her load draught will be 17 ft., with a carrying capacity of 1,800 to 2,000 tons; displacement when loaded, 2,870 tons, and a speed of 11 knots.



Cargo steamship, War Wasp, built by Nova Scotia Steel & Coal Co.

The general arrangement of the vessel, which is being built to Lloyd's 100 A1 class, is shown by the accompanying illustration. She is of the single deck type, with bridge and topgallant forecastle, the propelling machinery being placed amidships. The forecastle deck is 26 ft. long and the bridge deck is 56 ft. long, the space between main and bridge decks being available for cargo or bunkers. The ship is provided with complete double bottom of the cellular type, constructed with solid and open floors, having centre divisions and two longitudinal girders on each side, running the entire length. The space between the bottoms is arranged for for water ballast, so that a desired draft can be obtained when the ship is sailing without cargo. Four watertight bulkheads, extending to the main deck, divide the two cargo holds from the machinery space and peaks. The forward hold has two hatchways, each 28¾ x 19 ft. wide, one hatchway of the same dimensions being fitted to the after hold. The holds are large and clear of stanchions. The forward ones have a capacity of 53,000 cu. ft., and the after hold 22,000, or a total capacity of 75,000 cu. ft. In the forehold, at a point between the two hatchways, a deep web and arch frame has been fitted, with large brackets to the deck, thus eliminating stanchions and leaving the hold clear of obstruction. The ship will have 2 steel masts, each about 55 ft. high above the main deck, and for the handling of cargo the foremast will be provided with 2 derricks, while the mainmast will have 1, each derrick having a lifting capacity of three tons. For this purpose deck winches of the latest type will be supplied.

The vessel is of steel throughout, the frames spaced 23 in. apart, from the sternpost to abaft the collision bulkhead, where they are spaced 20 in., and, to cope with ice conditions, the spacing in the forepeak is reduced to 17 in., with heavy side plating at the load water line. This, together with panting beams and stringers, will make the vessel exceptionally strong at the forward end. At the fore end of the bridge will be a deck house, containing, on the bridge deck level, the captain's room, a spare room, steward's room, dining room, pantry, stores and other offices. Above this will be the chart room, pilot house and navigating bridge. Abaft of the captain's quarters, the chief officer and chief engineer, together with the junior officers and engineers, will be housed, also the cook. Accommodation in the forecastle will be provided for 5 seamen and 4 firemen. Here also will be the crew's wash room, lamp room and dunnage room.



Cargo steamship, War Wasp, built by Nova Scotia Steel & Coal Co.

The propelling engines will be De Laval

geared impulse type steam turbine, the first of this type to be placed on any ship in Canada. They are laso said to be the first set of De Laval geared turbines to be placed in a freighter, although since the vessel was laid down similar engines have been adopted by many United States shipbuilders. These engines will be capable of developing 1,000 brake shaft h.p. when running at a speed of 4,000 revolutions a minute. This will be reduced to 80 r.p.m. at the propeller, through two sets of reduction gears. The gears will be supplied with oil from a tank placed on the main deck. A separate pump will be used to draw the oil from gear casings and deliver it to this tank through a water cooler. There will also be a separate pump to supply cooling water. Air and circulating pumps will be driven by a separate engine, capable of maintaining a vacuum of 28½ in. with the engines developing full power. The feed pump will be driven by a chain from the propeller shaft. The vessel will be provided with the usual installation of ballast, general purpose and bilge pumps and fittings. Steam will be furnished at a working pressure of 185 lb. a sq. in. by 2 Scotch type marine boilers, each 11½ ft. in diameter and 11½ ft. long, and a high degree of steam economy is guaranteed. The three winches, of the usual type, have been designed and built locally.

This vessel, which was launched on July 9, has been bought by the Imperial Munitions Board for the British Government and has been named War Wasp.

The keel has been laid for a second vessel of the following dimensions: Length over all, 257¾ ft.; length between perpendiculars, 248¾ ft.; breadth molded, 35 ft.; depth molded 20 ft. This vessel will be of the single deck type, with bridge, forecastle and raised quarter deck aft and steel deck house and chart room on top of deckhouse, and will be built on the transverse system of construction. The propelling machinery will be located amidships, with the coal bunkers in wings. There will be 2 cargo holds, with 2 large hatches forward and 2 aft.

The propelling engines will be direct acting surface condensing triple expansion type, with condenser of the uniflex type, and the usual equipment of air, feed and bilge pumps, etc. Steam will be supplied from two boilers, 11½ ft. diameter, and 10¾ ft. long.

As before stated, the keel is laid, the double bottom is all in place, and a considerable portion of the frames erected. A large quantity of the material has been accumulated, and much of the work completed. It is expected that the vessel will be launched late in the year. It has been sold to the British Government through the Imperial Munitions Board.

A third vessel, which will be practically a duplicate in size and equipment of the second, will occupy the berth on which the first vessel now stands, the keel of which will be laid at once. This vessel will probably be retained for the building company's own use, at least, it will not be disposed of until construction is considerably advanced.

The investment in new plant in connection with the shipyard has been comparatively light. The building berths are served by three electric cranes, which command and serve the entire area of the berths. Shop work, such as bending frames, shearing, punching and countersinking plates, shop rivetting and similar work, is done in the Eastern Car Co.'s plant, which company also supplies the yard with electric power for the necessary cranes, lighting, etc., and compressed air for pneumatic rivetting, chipping, caulking, reaming, etc. The great bulk of the material entering into the construction of these vessels is of Nova Scotia manufacture. The stem sternpost and rudder frogings, all propelling shafting, propeller, and all fittings are made at the Nova Scotia Steel & Coal Co.'s plant, and the frame angles, floor plates, etc., are rolled in the company's mills.

Canada Steamship Lines' Dividends.

The Canada Steamships Lines has made an announcement respecting the declaration of dividends on preferred stocks. The entire declaration consists of 7.58 and ⅛%, and is divided as follows: 2 1/3% payable Aug. 1 to shareholders of record of July 15; 1¾% payable Nov. 1 to shareholders of record of Oct. 15; 3½% payable Jan. 2, 1918, to shareholders of record of Dec. 15, 1917. The uneven payment of 2 1/3% is explained by the directors' decision to clear up the payment for one month dividends, regarding which there has been some discussion. This was settled by allowing 0.58 1/3% for last December. The declaration also introduces the new policy of making payments quarterly hereafter, instead of annually, as announced a couple of years ago. The change is due to the fact that the company is now operating all the year round, instead of only during the summer, as formerly. The declaration of the dividends on the preferred stock for the balance of the year was made for the purpose of disposing of the matter finally, and clearing up all outstanding obligations on the preferred stock, together with those which would accrue during the balance of the year. The company will then start the new year with a clean sheet and make its declarations quarterly hereafter.

Atlantic and Pacific Ocean Marine.

The s.s. Sellasia, owned by Wm. Thomson and Co., St. John, N.B., is reported to have been sold to a British firm.

The Don Norske Amerikainje s.s. Kristianiafjord, of Christiania, bound homeward from New York, was reported ashore near Cape Race, Nfld., July 15.

The schooner Letitia T. Mackay, built recently at Meteghan, N.S., for A. B. Mackay, Hamilton, Ont., and which sailed the Atlantic recently, for France, is reported to have been sold at Bordeaux, France, for $110,000.

The France & Canada Steamship Co.'s s.s. Kansan was reported, July 11, to have been sunk near the French coast with a cargo of foodstuffs. The vessel was valued at $3,000,000 and the cargo at $2,000,000. She sailed from New York, June 28.

The s.s. Collingwood, owned by the Farrar Transportation Co., Toronto, carried 7,000 tons of ore between two U. S. ports, July 16, being the first Canadian vessel to run under the recently revised coasting regulations permitting reciprocal coasting privileges for Canadian and U.S. vessels.

The Marine Department has established an occulting white light on the outer end of the revetment wall on the south side of the Mission Channel entrance to Fort William. The light is shown from a lens lantern, on a wooden pole, surmounting a shed. It is 26 ft. above water level, is visible for 10 miles from all points of approach, and flashes 0.33 sec. alternating with an eclipse of 1.67 secs.

The s.s. Unkai Maru No. 5, recently under charter to Canadian Pacific Ocean Services, Ltd., for Pacific Ocean operation, was formerly the s.s. Robert Dollar, and owned by the Robert Dollar Steamship Co. It is stated that she originally cost $250,000 to build, and that in 1915 she was sold to Japanese interests for $2,000,000. She has again been sold since completing her charter, and is stated to have realized $2,600,000.

The Farrar Transportation Co.'s s.s. Meaford, under charter to the French Government for Atlantic and Mediterranean service, was attacked by a German underseas boat early in July and, after a fight, succeeded in sinking the submarine by gunfire, about 50 miles southwest of the Scilly Isles. Toronto daily papers in reporting the occurrence stated that the vessels was sunk 50 miles southwest of Scilly in the Mediterranean. The war is improving konwledge og geography, but theer is yet something to learn. It's a long way from Scilly to the Mediterranean.

The Marconi International Marine Communication Co. has declared a dividend of 15% for 1916. The report shows that the Marconi system has been installed on 1,855 vessels, and there were 3,347 operators employed. Many gallant acts of operators sticking to their posts while the vessels were sinking, and sending positions, etc., were recorded, while it is shown that 333 operators were saved from vessels sunk, 45 were drowned, 29 injured, 1 killed and 19 were taken prisoners. One operator was torpedoed three times in three months and was anxious to go to sea again, but the company rewarded him for his devotion to duty and placed him in a position ashore.

The Peninsular & Oriental Steam Navigation Co. is reported to have absorbed the Union Steamship Co. of New Zealand, which operates steamships between Australasia and Canada, and carries the mails under Dominion Government subsidy. The Union Steamship Co. has an authorized capital of £2,000,000, half preferred and half common. It is stated that holders of the common stock will receive 10s. of P. & O. deferred stock and £1 10s. in cash for each £1 share, which is stated to be equivalent to 62s. for Union Co.'s shares, which were quoted recently at 52s. The Union Steamship Co. owns 76 vessels, aggregating 243,000 gross tons, and this absorption will bring the P. & O.S.N. Co. tonnage to over 1,725,000 tons.

Canadian Lake & Ocean Navigation Co.'s s.s. Scottish Hero, which, early in 1915, was chartered to the Dominion Iron & Steel Co., Sydney, N.S., for three years, has been torpedoed and sunk. She sailed from Sydney, May 31, with a cargo of steel products for England and France. Capt. Luke Holmes, who was in command of her, was master of the s.s. Morwenna when she was torpedoed in 1915 while en The s.s. Scottish Hero was well known on the Great Lakes, being the largest of the turret type of vessel which were operating on the Upper Lakes for some years, and which have now disappeared. She was built at Sunderland, Eng., in 1895, her dimensions being: length, 297 ft.; breadth, 40 ft.; depth, 24.1 ft.; tonnage, 2,201 gross, 1,386 register. She was equipped with triple expansion engines route from England to Canada in ballast. and three Scotch boilers.

Maritime Provinces and Newfoundland.

A steamship built recently at Shelburne, N.S., and engined at Yarmouth, N.S., is expected to be placed in service between St. John, Westport and Yarmouth, by Hugh Cann & Sons, during August.

The Wedgeport Steamship Co.'s s.s. Vera B. Collin was launched recently at Wedgeport, N.S. She is intended for freight service and has a speed of about 8 knots an hour when loaded. She is equipped with 2 steam winches, steam steering apparatus, electric light, etc., and is schooner rigged. Her dimensions are: length, 137 ft.; beam, 25 ft.; depth of hold, 12 ft.; register tonnage, 200. She is reported to have been sold to C. Hannevig, New York, for operation in connection with the National Shipbuilding Co., which is being established at Harbor Grace, Nfld.

Province of Quebec Marine.

The Dominion Public Works Department received tenders to July 26 for the erection of a transmission pole line between the old and new dry docks at Lauzon.

The Dominion Government s.s. Argenteuil, built recently at the government yards at Sorel, for Marine Department buoy service on Lake St. Louis, Ottawa River, etc., has been completed, and entered service, July 9. She was launched at Sorel in Oct., 1916, and was described and illustrated in Canadian Railway and Marine World for Dec., 1916.

Judgment was given in the Quebec Admiralty Court recently in the matter of the cross suits arising out of the collision between Furness, Withy & Co.'s s.s. Hochelaga, under charter to the Dominion Coal Co., and the s.s. Etoile, in the St. Lawrence River, July 19, 1916. The former claimed $20,000 from the owners of the Etoile, while the latter counterclaimed for $7,000. The judgment given was that each party should pay half of the other's claim, and each pay their own costs. From this it would be taken that each party was held to be equally culpable, but the judgment concludes with the warning to the owners of the Etoile that they should "depart from the habit of taking a short cut to reach the shore at the point where the collision occurred and rely strictly on the law governing navigation."

U.S. Canal at Lake Washington Opened. A canal about 8 miles long, connecting Lake Washington with tide water through Lake Union, Seattle, Wash., was opened for traffic, July 4. The right of way is 300 ft. wide, the channel 100 ft. wide, and the depth 36 ft. The fresh water level is 9 ft. about Puget Sound at high tide, and the lock is capable of lifting larger vessels than any other lock in the U. S., apart from those on the Panama Canal. The lock has two chambers, one 825 by 80 ft., and the other 150 by 30 ft. The work was commenced in Nov. 1911, and the total cost is $5,000,000.

The Beaver Steamship Co., Ltd., has been incorporated under the Dominion Companies Act, with authorized capital of $100,000 and office at Montreal, to own and operate steam and other vessels and carry on a general transportation business.

Ontario and the Great Lakes.

The Brockville Ministerial Association is endeavoring to restrain the steamboat Thousand Islander from making Sunday trips out of that town.

Kolbe and Co., Port Dover, have placed a new vessel, the s.s. City of Port Dover, in service between Port Dover and Erie, Pa., making four round trips a week.

The Collingwood Steamship Co.'s s.s. City of Meaford is operating on a weekly schedule between Collingwood and Sault Ste. Marie, under command of Capt. F. G. Moles, who is Manager of the company.

The wreck of the s.s. John Plankinton, which sank in the Canadian channel of the Detroit River a few weeks ago, is being demolished by dynamite. The cargo and machinery have been salved.

The C.P.R. s.s. Manitoba and the Lake Erie Transportation Co.'s s.s. William S. Mack collided during a heavy fog off Whitefish Point in Lake Superior, July 9, the latter vessel being damaged and beached.

We have been officially advised that there is nothing in the report, referred to in our last issue, that the Great Lakes Transportation Co., Midland, had purchased the s.s. Forest City for service on the Georgian Bay route.

The s.s. Saronic, which was practically destroyed by fire about two years ago, and which was salved, overhauled and refitted, has again been placed in service, after being renamed W. L. Kennedy. She was formerly owned by the Northern Navigation Co.

The s.s. Rochester, owned by Canada Steamship Lines, Ltd., and registered in the U.S., now under charter to the Northern Navigation Co., a Canada Steamship Lines subsidiary, has been placed on the route between Cleveland and Detroit, thus acting as a feeder for the company's Lake Superior vessels.

The underwriters are offering for sale the wrecked s.s. Natironco, as she lies beached on the Canadian bank of the Detroit River, opposite the Ecorse Shipbuilding Co.'s plant. She was owned by the A. B. Mackay Steamship Co., Hamilton, and was sunk in collision with the s.s. Eastern States, June 19, and abandoned to the underwriters.

The U.S. Lake Survey reports the levels of the Great Lakes for June, in feet above mean sea level, as follows: Superior, 602.60; Michigan and Huron, 581.53; St. Clair, 576.31; Erie, 573.53; Ontario, 246.98. Compared with the average June levels for the past 10 years, Superior was 0.34 ft. above; Michigan and Huron, 0.76 ft .above; Erie, 0.62 ft. above, and Ontario, 0.06 ft. below.

A portion of the bank of the Welland Ship Canal, at a point where the highway between St. Catharines and St. Davids crosses the canal, near Homer, gave way, July 14. All work on the canal has been suspended by the government for the remainder of the war, and questions have been asked in Parliament in connection with the matter, it being strongly urged that the stoppage is causing serious deterioration of the work already done.

The Allan Line Taken Over.—Canadian Pacific Ocean Services, Ltd., which was organized for the purpose of taking over and operating the steamships hitherto run by the C.P.R., and by the Allan Line Steamships Co., the control of which had been in C.P.R. hands for several years, has completed all the arrangements necessary for the transfer and has taken over the vessels of the Allan Line and the company's offices in the United Kingdom, as from July 1. When the company was organized in 1915, it was the intention to take over the vessels of the two companies, as from Jan. 1, 1916, but it was thought desirable to defer this until a later date, and in the meantime, Canadian Pacific Ocean Services, Ltd., has been managing the C.P.R. and the Allan Lines.

Vancouver Drydock.—C. S. Meek, promoter of Vancouver Drydocks Ltd., is reported to have stated recently that the company is prepared to construct provided the Dominion Government will grant a subsidy.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during June.

ARTICLES			CANADIAN CANAL	U. S. CANAL	TOTAL
Flour	Eastbound	Barrels	420,838	853,190	1,274,028
Wheat	"	Bushels	10,325,995	16,292,901	26,618,896
Grain	"	Bushels	4,697,044	9,936,859	14,633,903
Copper	"	Short tons	1,331	22,268	23,599
Iron ore	"	Short tons	1,993,201	7,525,150	9,518,351
Pig iron	"				
Lumber	"	M. ft. b.m.	1,358	50,306	51,664
Stone	"	Short tons			
General merchandise	"	Short tons	6,671	32,977	39,648
Passengers	"	Number	1,647	671	2,318
Flour	Westbound	Barrels		80	80
Grain	"	Bushels			
Coal, hard	"	Short tons	16,400	310,746	327,146
Coal, soft	"		129,631	1,666,787	1,796,418
Iron ore	"	Short tons	3,248	1,014	4,262
Manufactured iron	"	Short tons	3,387	11,416	13,803
Salt	"	Barrels		101,513	101,513
Oil	"	Short tons			
Stone	"	Short tons			
General merchandise	"	Short tons	40,361	173,808	214,169
Passengers	"	Number	2,136	208	2,344
SUMMARY					
Vessel passages		Number	855	2,681	3,536
Registered tonnage		Net	1,949,002	8,212,610	10,161,612
Freight—Eastbound		Short tons	2,440,696	8,413,434	10,854,130
—Westbound		"	192,027	2,179,006	2,371,033
Total freight		"	2,632,723	10,592,440	13,225,163

Manitoba, Saskatchewan and Alberta.

The Ross Navigation Co.'s steamboat Nipawin was launched at Pas, Man., June 16. Her dimensions are: length, 100 ft. over all; hull, 85 ft.; beam, 20 ft.; depth, 4½ ft. She will be fitted with one pair sternwheel engines, 8 in. diameter, with 42 in. stroke, and a dry-back Scotch boiler 6 ft. in diameter by 8 ft. long, with 150 lb. steam pressure. She will be equipped with all modern conveniences, including electric light and hot and cold water, and will have accommodation for 30 passengers and a carrying capacity of 30 tons of freight on a 2 ft. draught. She will be used in passenger and freight traffic between Pas and Sturgeon Landing, in connection with mining development north of that point. It is also intended to establish a regular service as well between Pas and Nipawin, a prosperous farming settlement about 200 miles west of Pas on the Saskatchewan River. The Ross Navigation Co. has been operating boats from Pas for the past eight years, and has 2 steam tugs each towing barges, hauling copper ore from Sturgeon Landing to Pas.

British Columbia and Pacific Coast.

The Wallace Shipyards, Ltd., North Vancouver, B.C., is being sued by the Matsuo Co., Seattle, Wash., for $52,500, claimed as commission on the sale of four steamships to Otto Dahl, Philadelphia, Pa., representing certain Norwegian interests.

Preliminary plans for a freight shed to be erected on the Government wharf at Vancouver, show a building 1,005 ft. long, 92 ft. wide and 20 ft. high under trusses. As soon as the final plans have been approved, tenders will be invited by the Dominion Public Works Department for the construction of the shed.

Mention was made in a recent issue of an action by the British Columbia Salvage Co. against the Pacific Coast Steamship Co. for salvage service in connection with the s.s. Congress. The Pacific Coast Steamship Co. has now entered a counter action, claiming that the salvage company's tug abandoned the Congress and when it returned the vessel had drifted from a soft bottom to a ledge where she pounded, receiving considerable damage. The counter claim is for $200,000.

The C.P.R. is being sued at Vancouver by Balfour, Guthrie & Co. for loss sustained by the heating of a cargo of grain on the s.s. Monteagle in Mar., 1915. It is alleged that the heating was caused by improper ventilation of the vessel. The C.P.R. contends that its vessels are equipped with the most modern ventilating appliances and there are none on other of its vessels which is not on the Monteagle. Expert evidence was called to prove that the structural arrangement of the vessel was correct and that moisture in the grain was the most frequent cause of heating.

The United States Navy Yards shipbuilding facilities are being expanded so that eventually 16 war vessels may be on the ways at one time, while fully 32 may be in course of construction. This number does not include submarines and submarine chasers.

The Port Arthur Shipbuilding Co. reports that its orders in hand for delivery by the close of navigation in 1918, approximate $6,000,000.

Mainly About Marine People.

D. O. Lesperance, Chairman, Quebec Harbor Commission, has been elected President, General Car & Machinery Co., Montmagny, Que.

James Playfair, President and General Manager, Great Lakes Transportation Co., returned recently from California, where he went to recuperate after an operation for appendicitis.

Capt. R. F. Carter, who has commanded the s.s. Maid of the Mist, the sightseeing steamboat at Niagara Falls, for 32 years, has retired, and has been succeeded by Lieut. Williams.

Capt. F. W. Livingstone, master of the barge Baroda, and formerly foreman, Empire Stevedoring Co., and subsequently in charge of the B. C. Longshoremen's Association, and member of the Shipmasters' Association of British Columbia, died at Cumberland, Vancouver Island, recently, from pneumonia, contracted as a result of exposure after rescuing his only boy from Union Bay.

W. I. Gear, Vice President, Robert Reford Co., steamship agents, etc., Montreal, who is acting as Director of Steel Shipbuilding for the Imperial Munitions Board at Ottawa, has been elected a director of Wabasso Cotton Co., Ltd.

F. S. Henning, Superintendent of the filtration plant at Toronto Island, died at Toronto, from cancer of the bowels, aged 58. In his early life he was a marine engineer in the Maritime Provinces, and later went west, where he continued the same business on Lake Winnipeg. He was in city service in Toronto for about 19 years.

H. W. Crawford, who was recently appointed General Agent, Canada Steamship Lines, Ltd., Cleveland, Ohio, was born at Bowmanville, Ont., Aug. 24, 1887, and entered Richelieu and Ontario Navigation Co.'s service, May 1, 1913, since when he has been, to 1914, Travelling Passenger Agent, Rochester, N.Y.; 1915 to 1917, District Passenger Agent, Chicago, Ill.

David Sylvester, who died at Toronto, July 18, aged 79, was first connected with lake navigation in 1848, when, at the age of 10, he sailed on the schooner Clarissa, then operating from the Humber River, Lake Ontario to Oswego, N.Y., with flour. He gave up the actual sailing of vessels in 1868, and in partnership with his brother, leased the Church St. wharf and elevator, where he carried on a general wharfage, grain storage and vessel owning business, from which he retired a few years ago. It was an interesting feature of the grain elevator operated by the brothers, that the grain was elevated in buckets containing 5 bush. at a time, which were drawn to the top of the cupola by a rope, running over grooved pulleys, and attached to a horse, which strolled a regulation number of feet into the yard every time a bucket of grain was elevated.

Japanese Steamships for the U.S.—It is reported that arrangements are being made between the U. S. and Japanese Governments, that the latter will supply about 50,000 tons of shipping for U. S. use, in return for shipments of steel. The Japanese Government is also endeavoring to induce the U. S. Shipping Board to place orders for steamships in Japan. It is said that steel vessels can be turned out there in about four months provided steel can be supplied.

Lake Vessels for Winter Service on the Atlantic.

A correspondent of the Toronto Globe, in writing in reference to the destruction of a German submarine by the Canadian s.s. Meaford, says: "I wonder why the large fleet of steamships similar to the Meaford should be idly tied up for four months of the year, in various Great Lake ports, when they could be usefully employed during this period in aiding materially to solve the critical transportation problem, which is of such vital moment to the allies at this time, and will be more so as the winter approaches, and the need becomes more urgent for the transportation of food supplies and munitions from America to Europe. Practically all of the lake steamships are capable of standing the test for ocean service, and there is no reason why this great fleet of Canadian and United States owned ships such as the Meaford should not be transferred with the approach of winter to the Atlantic seaboard and employed in helping to solve this transportation problem. Such employment would be both profitable to the owners of the vessels and helpful to the great cause, and with such a large fleet of ships of fairly uniform capacity and speed steps could be taken to convoy them that would largely, if not entirely, guard against submarine attacks, since experience shows that, where sufficiently convoyed, vessels can safely traverse the route between Europe and America, as witness the record established in the transportation of some 400,000 men from Canada to Britain without the loss of a transport.

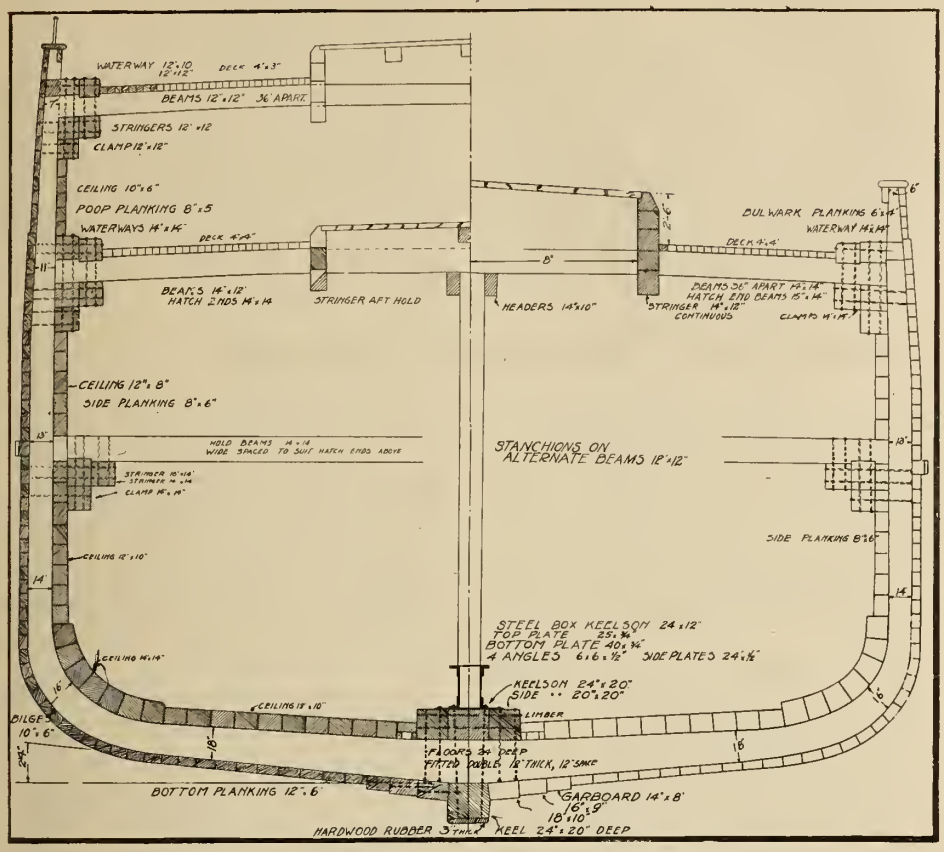
Reciprocal Coasting Arrangement between Canada and the United States.—The following order in council has been passed changing the coasting regulations for U.S. vessels: Vessels of the United States shall be permitted to engage in the coasting trade of Canada on the inland waters between Lake Superior ports and Montreal without penalties being imposed, during the remainder of 1917. This regulation shall remain in force so long as similar privileges are in effect granted to Canadian vessels by the United States. An arrangement in the form of the practical suspension of penalties imposed by the navigation laws, on application from the foreign ships concerned, has also been made by the United States Department of Commerce, whereby Canadian vessels are enabled to carry cargoes from one U.S. port on the Great Lakes to another.

The Reid Towing and Wrecking Co., Ltd., which took over the Canadian business of the Reid Wrecking Co., Ltd., Sarnia, Ont., recently, has acquired the complete wrecking outfit, together with docks lands and buildings of the old company. The steam tugs, etc., named James Reid, Smith, Sarnia City, S. M. Fisher and Manistique, are also included. The company is at present engaged in salvage work on the s.s. Saxona, near Detour, R. M. Wolvin, Montreal, is President; and F. S. Isard, Comptroller, Canada Steamship Lines, Montreal, is Treasurer, and Capt. J. T. Reid, Sarnia, is Manager.

The Seattle Construction Co. has entered action at Vancouver against Grant, Smith & McDonnell, contractors, for $150,000 damage done to a floating dry dock which was capsized and smashed while under lease to the contractors on their work on the construction of the breakwater at Victoria.

Standard Specification for Wooden Steamships for British Government.

With the demand for immediate and speedy construction of steamships to replace losses due to submarine warfare, vessels in Canada has been placed in the hands of the Imperial Munitions Board at Ottawa by the British Government and

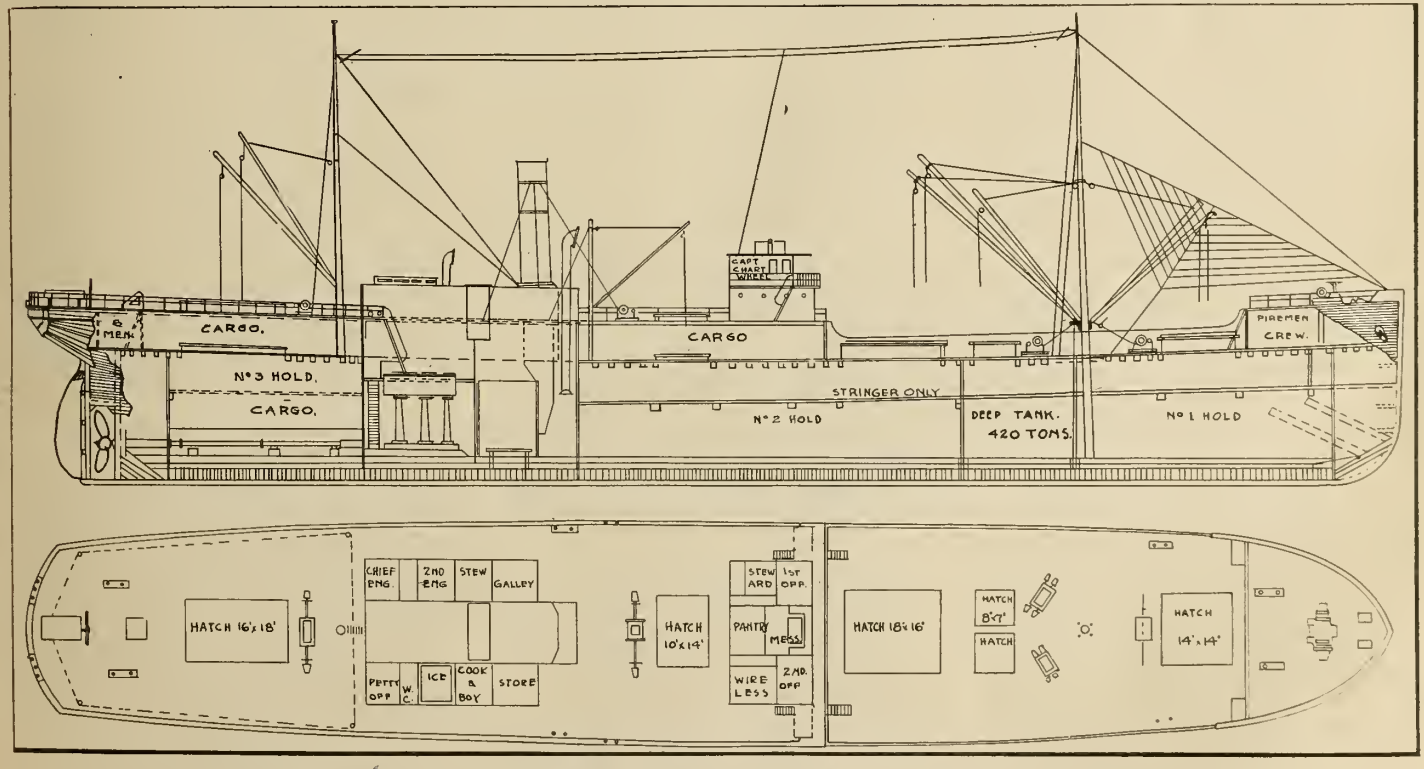


Cross section, standard wooden steamships, for British Government.

but for the wooden vessels a general specification, with plans of general arrangement and amidship section, have been prepared. They are not intended to furnish working details, but are to be treated as general data intended to indicate in outline the class and construction of vessel required. The details of hull construction, fastening, etc., in specification are such as will meet in general with the approval of Lloyd's and the board's technical advisers, but nothing in the specification will relieve the contractor from the responsibility of employing a skilled staff to work out detail drawings and submit proposals for such details to the Classification Society and to the board's advisers, who will however, give all assistance in their power to help contractors, without accepting responsibility for the proper carrying out of the contract. The vessels are to be built to Lloyd's requirements for A1 classification and to the British Board of Trade requirements as far as necessary for cargo steamers. The hull's dimensions are to be as follows—

Length between perpendiculars	250 ft.
Breadth, extreme	43½ ft.
Breadth, molded	42½ ft.
Depth, molded	25 ft.
Depth over keel	27 ft.
Draught for displacement	22 ft.
Draught over keel	21 ft.
Deadweight on 20 ft. max. draught to Lloyd's summer freeboard, approx.	2,500 tons
Deadweight on 21 ft. max. draught, approx.	2,800 tons

The hull is to be divided by 4 bulkheads in addition to deep tank bulkheads, viz., collision and aft peak bulkheads, and bulkheads at fore and aft ends of machinery space. All lumber used in construction is to be Douglas fir, unless otherwise specified, but in the case of yards in the Eastern and Maritime Pro-



Standard wooden steamships being built in Canada for British Government.

and to enhance the merchant service equipment generally, came the necessity for the adoption of a standard specification. The whole question of securing orders have been given for a large number of both wooden and steel steamships. For the steel steamships it has not been possible to have a standard specification, vinces, the lumber may be such as can be easily obtained, but it must be approved by the board. Owing to the danger of corrosion arising in the steel work

specified, the keelson logs are not to be of oak except with the board's special permission.

Each vessel is to be fitted with top gallant forecastle and combined poop and bridge, 2 masts and derrick posts with cargo gear, 4 hatches with 5 steam winches, steam windlass with outfit and gear as required by rules, deep water ballast tank for approximately 400 tons of water, accommodation for officers and crew, bridge house with navigation bridge to be located at the forward end of the combined poop and bridge, officers and engineers to be housed alongside engine room casing. There is to be electric lighting equipment of 7½ k.w. capacity, driven by single cylinder, forced lubrication engine, to be supplied, with all cables, fittings, lamps and switchboard. Each vessel is to be provided with 2 class A lifeboats to British Board of Trade requirements, one on each side of the vessel, each fitted with yellow metal air tanks, compass, etc., and each boat to be capable of taking the whole crew; a dinghy and service boat are also to be supplied, and all boats are to be supported in davits to the Classification Society's requirements.

The machinery is to consist of one set of triple expansion surface condensing engines to develop 1,000 i.h.p. at sea at 65/70 r.p.m.; cylinders approximately 20, 33, and 54 ins. diar., by 40 ins. stroke; condenser with about 1,500 ft. cooling surface; independent main feed pump with long stroke simplex type and with float control tank under; air, circulating, feed and bilge pumps to be driven by levers from main engine; general service pump of duplex type to be fitted to serve as boiler feed pump; main feed pump of simplex long feed type, fresh water pump; ballast pump, duplex, 100 tons capacity; exhaust surface type feed heater; evaporator of 15 tons capacity; auxiliary condenser for winches; feed filter of gravity tank type; two boilers of Howden water tube type, three furnace design, for forced draught, and fitted for coal or oil burning, and oil burning installation and pumps to be fitted.

After completion, the trials are to consist of a 6 hr. set run at full power, and builder must guarantee workmanship and material for six months after delivery. Everything is to be supplied to complete the vessel as a full sea going ship to Lloyd's requirements and to the board's satisfaction.

Shipbuilding Activities Throughout Canada.

Wooden Steamship Building for British Government.

The Imperial Munitions Board gave out the following memo. on June 29: "Canada's production of wooden cargo ships has now become a real factor in the industrial life of the country. Contracts have been placed by the Imperial Munitions Board, under instructions from the British Ministry of Shipping, and at present there are about 30 ships under order on the British Columbia coast, and about 15 on the St. Lawrence, the lakes and in the east. These vessels are all from 2,500 to 2,800 tons d.w., and are 250 ft. long, by 43½ ft. molded breadth, by 25 ft. molded depth. Douglas fir is used for the hulls in the west and native hardwood is the principal material in the east. The vessels will be driven by triple expansion marine engines, 20 x 33 x 54 x 40, driving a single propeller approximately 14½ ft. in diameter, and developing about 1,000 h.p., at from 65 to 70 revolutions a minute. The boilers will be of a marine water tube type. The leading engine and boiler shops of the country now have this programme in hand. The vessels will be equipped with 5 standard cargo winches and a 7½ kilowatt electric lighting set of approved type. It is expected that the engines as well as the hulls will be built in Canada, a number of contracts for engines having already been let in this country. It is expected that some of the vessels will be in the water before the end of 1917. The board's plans involve as complete standardization as is possible, in order that in the future a maximum production may be realized if this type of vessel proves a success. Plans and specifications of the standard wooden steamships are given on another page of this issue.

The following information about wooden steamships to be built for the British Government, under contracts placed by the Imperial Munitions Board, is taken from press dispatches and local papers, but has not been verified, there not being sufficient time to do so before publication.

Cameron-Genoa Shipbuilders, Ltd., Victoria, B.C., has laid keel blocks at their Point Ellice yards, for the first 4 wooden steamships which it is said are to be built there under contract from the board.

The Dominion Bridge Co., Lachine, Que., has taken contracts to build a number of marine boilers, and several sets of engines, for wooden steamships for the board, and is adding to its plant and equipment, so as to be able to carry on similar work on an extensive scale.

The Foundation Co., Victoria, B.C., which is said to have a contract from the board for 5 wooden steamships, is proceeding with the preparation of its yards, on the site formerly occupied by Turpel's ways. Four runways to tide water have been excavated. Machinery for the power plant is being assembled, and the frame work of a 2 storey mill building is about completed.

Grant & Horne, St. John, N.B., are stated, by the St. John Board of Trade's Secretary, to have a contract from the board for 2 wooden steamships.

Lyall Shipbuilding Co., North Vancouver, B.C.,, Wm. Lyall, President, P. Lyall Construction Co., Montreal, and associates, have organized a shipbuilding company, and are said to have either bought or leased from Wallace Shipyards, Ltd., its no. 2 yard at North Vancouver. The Lyall Shipbuilding Co. is said to have contracts from the board for 10 wooden steamships.

Pacific Construction Co., Coquitlam, B.C., is said to have a contract for 2 wooden steamships.

Quinlan & Robertson, Ltd., contractors, Montreal, is reported to have a contract for 4 wooden steamships.

St. John Shipbuilding Co., St. John, N.B., is reported, by the St. John Board of Trade's Secretary, as arranging to start building wooden ships immediately with the expectation of going into steel shipbuilding later on.

D. A. Saker, an English shipbuilder, is reported, by the St. John, N.B., Board of Trade's Secretary, to have bought the Warner mill property there, fronting on the main harbor, and to be about to build 3 vessels.

The Thunder Bay Contracting Co., Fort William, Ont., will, it is said, build the first wooden sea going vessel to be built there.

Toronto Shipbuilding Co. Ltd., Toronto, in which J. E. Russell, of the Russell Contracting Co. and J. J. Manley, of the C. S. Boone Co., are principally interested, is said to have a contract from the board for 2 wooden steamships.

New Westminster Construction & Engineering Co., Ltd., has been incohporated under the British Columbia Companies Act, with authorized capital of $30,000. It is said to have acquired a site on Poplar Island, in the Fraser River, near New Westminster, from the Dominion Government, and to be proceeding rapidly with the construction work necessary to enable wooden steamships to be built there. It is reported that it has contracts from the board for 4 wooden steamships.

Western Canada Shipyards, Ltd., Vancouver, B.C., the organization of which was mentioned in our last issue, has been incorporated under the British Columbia Companies Act, with an authorized capital of $30,000, A. R. Mann, of the Northern Construction Co., being President and Managing Director. It has contracts from the board for 6 wooden steamships.

R. R. Gray Chisholm, representing the British Shipping Controller, was in Victoria early in July, with T. A. Russell, of the Imperial Munitions Board, consulting with the board's local representatives regarding wooden shipbuilding generally, and particularly as to the facilities offered for the manufacture of engines, boilers and auxiliary equipment required for the wooden steamships under contract on the Pacific coast. They went to Prince Rupert afterwards. Orders are reported to have been placed by the board with various engineering works at the Pacific coast for a number of sets of engines and auxiliary machinery for wooden steamships.

Representatives of South Vancouver and Point Grey municipalities, B.C., have asked the board that contracts for wooden steamships be awarded on condition that they be built on the north arm of the Fraser River, within the boundaries of those municipalities. Attention is called to the excellent sites available for shipbuilding plants, and to the fact that most of the artisans engaged in shipbuilding reside in the municipalities.

Steel Steamship Building for British Government.

The Minister of Marine, in speaking in the House of Commons recently, referring to steel steamships being built in Canada for the British Government under contracts placed by the Imperial Munitions Board, promised full information, which he furnished subsequently as follows:

Canadian Vickers, Ltd., Montreal, 2 vessels, each 7,000 tons dead weight; draught, 24 ft.; mean sea speed, 11 knots; delivery, opening of navigation, 1918.

Collingwood Shipbuilding Co., Collingwood, Ont., 2 vessels, each 2,900 tons dead weight; draught, 17½ ft.; mean sea speed, 10 knots; delivery, May and Aug., 1918.

J. Coughlan & Sons, Vancouver, B.C., 5 vessels, each 8,800 tons dead weight; draught, 24 ft. 2 in.; mean sea speed, 11

knots; delivery, Jan., Feb., Mar., May, and July, 1918.

Midland Drydock Co., Midland, Ont., 3 vessels, each 3,400 tons dead weight; draught, 19½ ft. to 19 ft. 10 in.; mean sea speed, 10 knots; delivery, 1 in July, 1918, 2 before close of navigation, 1918.

Nova Scotia Steel & Coal Co., Naw Glasgow, N.S., 1 vessel, 1,800 tons dead weight; draught, 17 ft. 1½ in.; mean sea speed, 9½ knots; delivery, July, 1917; 1 vessel, 2,400 tons dead weight; draught, 17 ft. 4 in.; mean sea speed, 8¾ knots; delivery, Jan., 1918.

Polson Iron Works, Toronto, 6 vessels, each 3,500 tons dead weight; draught, 19¾ ft.; mean sea speed, 10 knots; delivery, 2 in June, 1918, 2 in July, 1918, and 2 before close of navigation, 1918.

Port Arthur Shipbuilding Co., Port Arthur, Ont., 1 vessel, 4,200 tons dead weight; draught 22 ft. 10 in.; mean sea speed, 10 knots; delivery, Aug., 1917; 5 vessels, each 3,400 tons dead weight; draught, 19¾ ft.; mean sea speeed, 10½ knots; delivery, 1 by close of navigation, 1917, 1 in June, 1918, 2 in Aug., 1918, and 1 before close of navigation, 1918.

Wallace Shipyards, Ltd., North Vancouver, B.C., 1 vessel, 4,500 tons dead weight; draught, 22½ ft.; mean sea speed, 10 knots; delivery, June, 1917; 2 vessels, each 4,600 tons dead weight; draught, 22½ ft.; mean sea speed, 10 knots; delivery, Dec., 1917, and Aug., 1918.

Steel Steamships Authorized to be Built For Neutral Owners.

As previously stated in Canadian Railway and Marine World, the Dominion Government, last year, authorized 20 vessels to be built for delivery on completion, to neutral owners, 18 for Norway, and 2 for the United States. The present position in regard to these is as follows.

Canadian Vickers, Ltd., Montreal, 2 for Norway. These will be requisitioned for the British Government.

J. Coughlan & Sons, Vancouver, 3 for Norway. Only one was contracted for and this will be requisitioned for the British Government.

Nova Scotia Steel & Coal Co., New Glasgow, 2 for Norway. No contracts were entered into. The company has sold to the British Government one vessel, War Wasp, which it built on its own account. It has started another for the government and will build a third, the disposition of which has not yet been decided.

Polson Iron Works, Toronto, 4 for Norway. These will be requisitioned for the British Government.

Port Arthur Shipbuilding Co., Port Arthur, Ont., 3 for Norway. At least 2 of these will be requisitioned for the British Government.

Thor Iron Works, Toronto, 2 for the United States. It has not been decided whether these will be requisitioned or not.

Wallace Shipyards, Limited, North Vancouver, 4 for Norway. No contracts were entered into, but one steel steamship was built for Japanese owners and was sold, presumably, to the British Government, and named War Dog. The company has contracts for 3 more steel steamships from the board.

SHIPBUILDING NOTES.

Canada West Coast Navigation Co.'s auxiliary ship Jessie Norcross, completed recently at North Vancouver, has been chartered to convey 1,600,000 ft. b.m. lumber from British Columbia to Adelaide.

Canada West Coast Navigation Co.'s seventh auxiliary ship, Janet Carruthers, was launched from the Wallace Shipyards, North Vancouver, June 28. The launching took place at midnight, which is somewhat of a novelty, even for war time.

The American Shipbuilding Co. has completed a full Welland canal size steamship, at Superior, Wis., named Poitiers, for the Cie. des Chemins de Fer d'Orleans, Paris, France. She is sister vessel to the s.s. Toulouse built there for the same owners, and launched in April.

The Yarmouth Shipbuilding Co., Ltd., Yarmouth, N.S., held its first official meeting recently and elected the following officials and directors: Capt. A. Cann, President; John D. Kirk, Vice President; George R. Earl, Secretary-Treasurer; and H. S. Crowell, L. C. Gardner, George Killam and Donald Cann, directors.

The Dominion Bridge Co., Lachine, Que., is reported to be working in conjunction with Sir Wm. Beardmore & Co., shipbuilders, admiralty contractors and armament makers, Glasgow, Scotland, with a view to jointly establishing a shipbuilding yard in Canada, for which the Dominion Bridge Co. has practically all the equipment necessary. The greatest difficulty about going ahead appears to be the uncertainty of being able to secure the steel necessary for shipbuilding.

Auxiliary Schooner Building in British Columbia.—The fifth auxiliary schooner to be built by Cameron-Genoa Mills Shipbuilders, Ltd., is in an advanced stage, and it is expected will be launched shortly, and named Jean Steedman. The keel of a sixth has been laid, and when the sixth is completed, the contracts for six of these vessels, two for Canada West Coast Navigation Co., and four for subsidiary of allied interests under the management of H. W. Brown & Co., Vancouver, will be finished. All the vessels for Canada West Coast Navigation Co. are registered at Vancouver, and those for the subsidiary companies are to be registered at Victoria.

Regarding vessel building for the Dominion Government, Sir James Lougheed announced in the Senate, recently, that contracts had been awarded for the construction of two wooden auxiliary sailing vessels of about 2,500 tons each, at an approximate price of $230,000 each, for service between the Pacific and Atlantic coasts. These contracts have been awarded to Wallace Shipyards, Ltd., and Harrison & Lamonde Shipbuilders, Ltd., Vancouver, B.C., respectively.

Transfer of Canadian Vessels Stopped.—Following the recent regulation by the British Government stopping the transfer of the registry of British vessels, from ports inside, to ports outside, the United Kingdom, an order in council has been passed, at Ottawa, providing that no application for the transfer of the registry of a British ship from a port of registry in Canada to a port of registry outside of Canada, shall hereafter be made or granted without the written consent of the Minister of Marine and Fisheries.

Vessel Draught for Sault Ste. Marie Canals.—The upbound draught for vessels passing through the U.S. lock has been increased to 20¼ ft., and the draught for downbound vessels passing through either the N.S. or Canadian canals to 20½ ft. The upbound draught for Lake St. Clair remains as before, 20¼ ft., while the downbound draught has been increased 2 in.

Government Shipbuilding in the United States.

Maj.-Gen. Goethals, General Manager, U.S. Shipping Board, Emergency Fleet Corporation, announced, on July 13, that contracts for 348 wood ships have been let or agreed upon, with a tonnage capacity of 1,218,000 tons, at a cost completed of approximately $174,000,000. In addition, there are under negotiation contracts for about 100 wood ships. Contracts for 77 steel ships have been let or agreed upon, with a tonnage of 642,800 tons, at a cost of approximately $101,660,356. There are thus provided 425 ships of all sorts, with an aggregate tonnage of 1,860,800, at a cost of approximately $275,000,000, besides 100 more wood ships under negotiation. He will continue to let all contracts for wood ships (of design approved by the corporation's naval architect) which he can secure from responsible bidders.

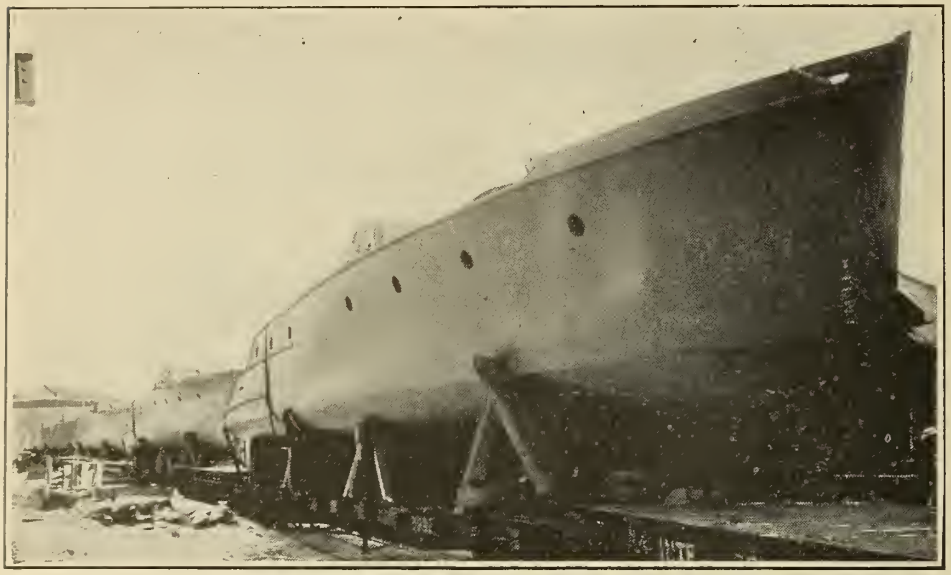
He also made the following statement: "My main reliance for getting the greatest amount of the most serviceable tonnage in the shortest time will be on the construction of fabricated steel ships of standard pattern. For that purpose I shall use to some extent the existing yards. On July 16, I shall offer contracts for the building of two plants (to be owned by the government) for the construction of fabricated steel ships, to produce 400 ships of an aggregate tonnage capacity of 2,500,000 tons within the next 18 to 24 months. For the building of these two yards and the construction of ships in them I shall offer as compensation to the agents who undertake the work a fee of approximately 6% of the total cost of the work, with rewards for savings on cost and for speed in delivery. Provision will be made for decreasing the fee to prevent unnecessary cost. The contracts will give the government the benefit of government-fixed commodity prices and will provide for cessation of work at any time, so that the appropriation may not be exceeded. Options will be given to the contractors to purchase the plants at arbitrated values on the completion of the work. The design of the ship and the plans of the yards are ready, the distribution of the work of furnishing the material and of fabrication is arranged.

"On July 16, I shall deliver to shipbuilders a general statement of the programme which I have long been maturing for commandeering ships now under construction for private account (such ships having an aggregate tonnage considerably in excess of 1,500,000 tons). The essence of this programme is to commandeer all such ships and expedite their construction by adding labor and cutting out refinements. By thus federalizing each yard, giving it government help and putting it on a speed basis, we shall produce its greatest efficiency. As fast as the berths are cleared each yard will be devoted to the production of a single type of tonnage."

On July 24, it was announced that, owing to differences between the Chairman of the U.S. Shipping Board, Wm. Denman, and the General Manager of the Emergency Fleet Corporation, Maj.-Gen. Goethals, the former had resigned, at President Wilson's request, and the latter's resignation had also been accepted. E. N. Hurley, Chicago, formerly Chairman of the Federal Trade Commission, has been appointed Chairman, U.S. Shipping Board, and W. L. Capps, Chief Constructor of the Navy, General Manager, Emergency Fleet Corporation.

Motor Boat Submarine Chasers Built in Canada.

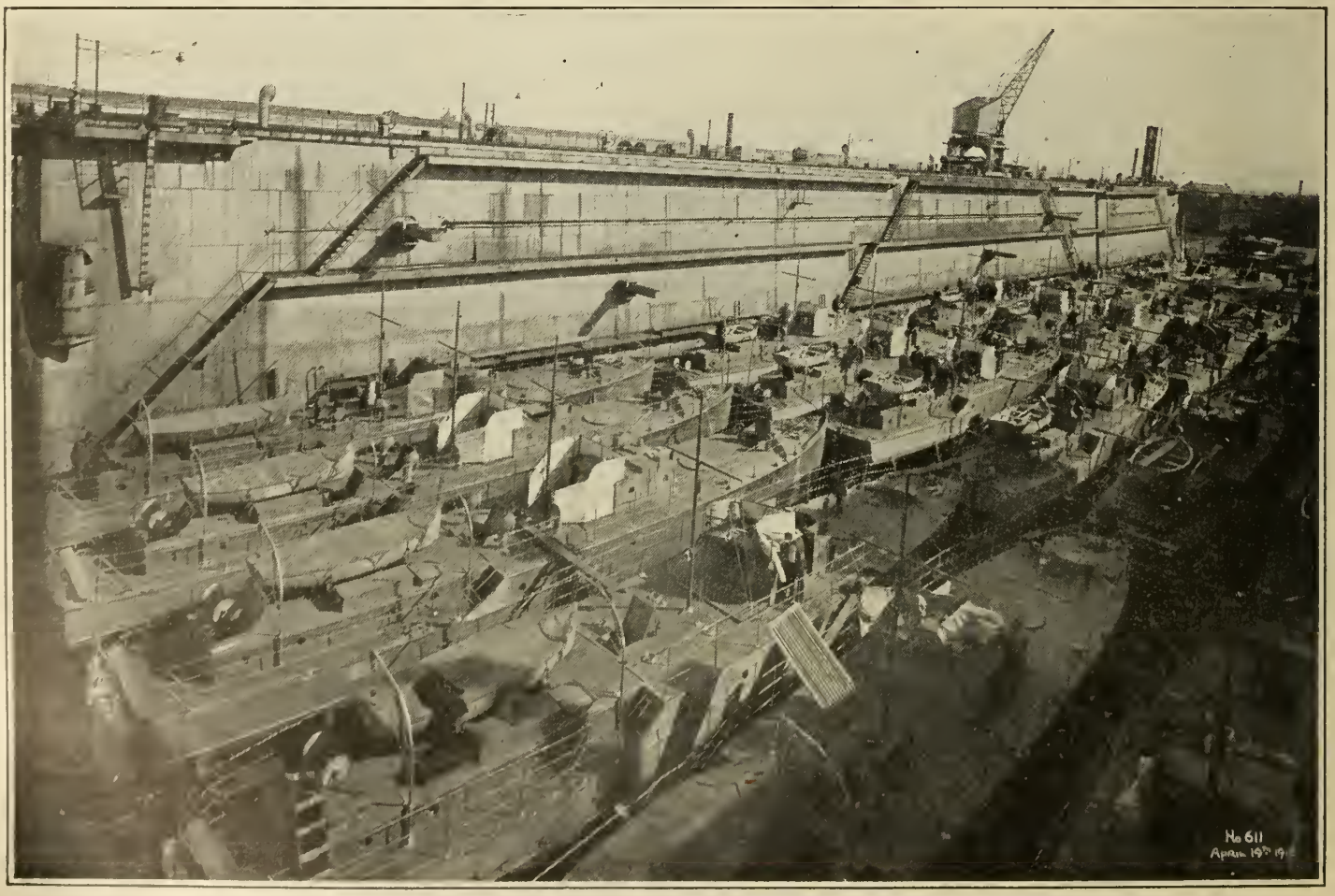
During recent months much has been heard of submarines and submarine warfare. Many devices have been made to combat the undearsea craft, one of the best and most successful being fast motor boats known as submarine chasers. Several hundred of these submarine chasers have been built in Canada within the past 12 months, 550 having been built at one shipyard. They are twin screw, gasoline driven boats, and practically of a new design. The dimensions are: length overall, 80 ft.; beam extreme, 12 ft.; depth at side, from top of rabbet to top of beam, 6 ft.



Five Submarine Chasers Loaded on Cars for Transport to the Atlantic Coast.

They are furnished with 2 standard right and left gasoline marine engines, having 6 cylinders 10 x 11 in. and developing 220 h.p. The engines are fitted a short distance aft of amidships. With this power plant a speed of 20 knots was easily exceeded. Fuel is carried in four tanks. The boats have fine lines and are very handsome looking, although sturdily built, and when running at high speeds leave a good clean wake. They are flush decked, with a small steering and chart room just forward of amidships, and also a small house or casing over the engine and state rooms. Forward of the steering shelter is a quick firing gun, while aft is a lifeboat about 14 ft. long.

The hulls are subdivided by 5 steel and 1 wooden, watertight bulkheads. In the fore peak is a store room for provisions, etc., also gasilen tanks, behind which is a crew space, with ample accommodation for 8 men, while aft are smaller but more comfortable quarters for 2 officers. The floors in the living quarters are covered with linoleum. The engine room floor, of white oak, is covered with light sheet metal. Hinged hatches and ladders lead into the store room and crew's quarters, also the engine and dining rooms. A companionway, with slide and steps, leads down to the staterooms. The keel and stem are of white oak, 1¾ in. frames, 2½ in. deck beams and 2¼ in. roof beams of the same material. The keelsons and planking are of yellow pine, bulkheads and cabin top of white pine decking and cabin sides of Oregon pine. The rudder is of the outboard balanced type and is made of manganese bronze, as are also the propellers. They are elaborately fitted out, being complete in every detail, and have electric light. Thy have proved very useful as patrol boats.



Fleet of Thirty Submarine Chasers in a Canadian Dry Dock.

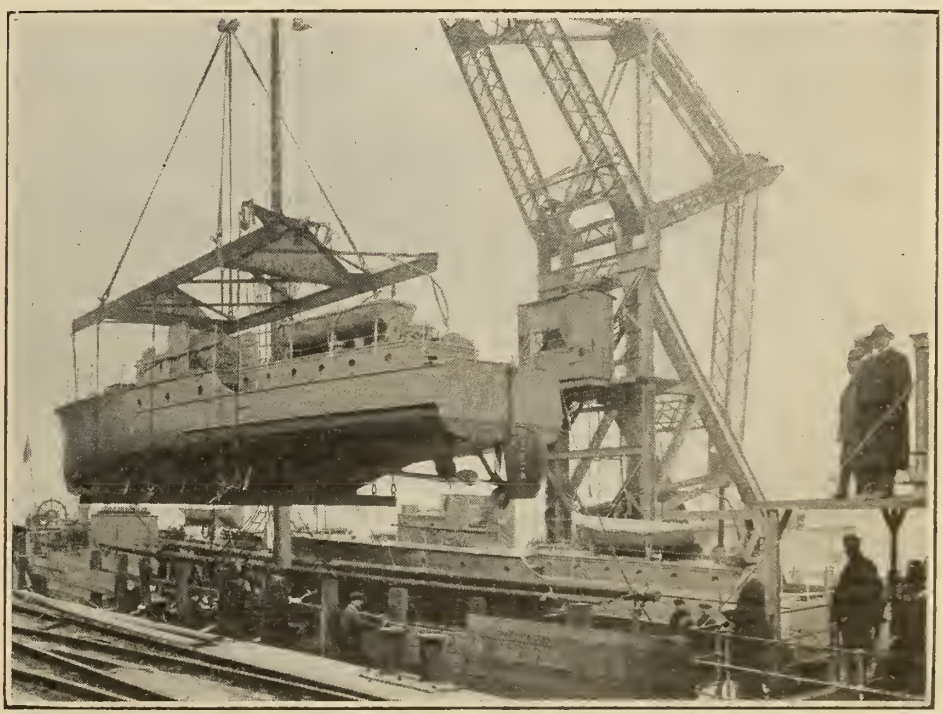
Outturns of Grain Cargoes on the Great Lakes.

Canadian Railway and Marine World for May gave some details of the agreement arrived at between the Grain Clearance Corporation of Buffalo and its subscribers, relative to the methods of dealing with the outturns of grain cargoes in international business and on business purely between U. S. ports. The business between Canadian ports is covered by the regulations adopted by the Grain Commission for Canada. Under this agreement the contribution of the subscribing vessels was at the rate of half a bushel per 1,000 bush. from and to all ports. To provide funds for operation vessels were to pay $200 on first arrival with grain cargo, and the rates of 12c and 24c under the previous year's contract were increased to 15c and 30c respectively. During this season, the run of shortages has been tremendous, while the over runs have been in comparison infinitesimal. In view of this, the Grain Clearance Corporation issued a circular to its subscribers, June 28, as follows:

"At a conference held at Buffalo, N.Y., June 28, between the Grain Clearance Corporation and representatives of the United States and Canadian carriers subscribers to our 1917 contract, the results of this season's business were laid before them, showing that the shortages were running more than a bushel to the thousand and that the shortages so far have amounted to approximately $77,377.20, as against overruns of only $8,846.89; and that the unpaid shortage balances amounted to approximately $16,000, with the only uncollected assets the amount due from the Canadian shipping elevators at Fort William and Port Arthur, on their allowance of one-sixth bushel to the thousand, which would in all probability fall short of meeting the unpaid losses anywhere from $1,000 to $5,000; and, therefore, as the heavy ratio of losses was continuing, the company could not continue business with fairness to its subscribers. It was the sense of the conference that the Grain Clearance Corporation should discontinue its business and wind up its affairs, carrying out its contracts with reference to ships loaded before midnight June 30, so far as its assets and collections would enable it to do. The directors met later in the day, and after consideration of the reports and the sense of the conference, resolved that the Grain Clearance Corporation pay no further shortages or losses until after all shipments loaded prior to midnight, June 30, shall have been received and unloaded and the total amount of shortages and losses of the corporation be ascertained; and that the managers and officers of the corporation be directed to terminate its business and give notice of such termination and withdrawal of its contracts to subscribers and other parties in interest. Accordingly, you are hereby notified that while we regret such action is necessary, we withdraw our contract with you so far as boats loaded after June 30 are concerned, and that we now discontinue business and will wind up the affairs of the company as soon as possible, settling the unpaid accruing shortages so far as our assets will permit, or paying pro rata in case the assets are not sufficient to pay in full."

A Submarine Chaser on the St. Lawrence River.

On Canadian business, the report to the Grain Commission covering business between June 11 and 25, shows there were 138 cargoes unloaded at all ports, including Buffalo, and only 22 overruns. The Dominion Marine Association has taken the matter up with the Grain Commission to see if it has any explanations or suggestions to offer in view of the extraordinary situation.



Loading of Submarine Chaser on Transport for England.

The Beaver Tow Boat Co., Ltd., has been incorporated under the British Columbia Companies Act, with $15,000 authorized capital and office at Vancouver, to own and operate steam and other vessels, to carry on a general tugboat business, and to transport mails, passengers and merchandise.

Wireless Telegraph Operators on Pacific Coast Vessels.

The board of conciliation appointed to enquire into the complaint of employes of Marconi Wireless Telegraph Co. of Canada, engaged on vessels operating on the Pacific coast, reported recently. Twenty-three operators were affected; of these 7 were paid $30 a month; 8, $35; 6, $40; 1, $55; and 1, $60; the two latter being engaged on trans-Pacific vessels, where a minimum of $40 a month obtains. The employes complained that the salary was insufficient, that there was lack of proper accommodation on the coastwise vessels, that the annual holiday and the uniform allowance has been discontinued, and that there was unfair discrimination by the company's Pacific coast manager. They claimed that the minimum wage should be $60 a month rising by annual increments to $80. J. H. Lauer, General Manager, offered a minimum wage of $40 a month, with annual increases up to $60.

The board considered that the evidence fairly established the employes' claims, with the one possible exception of unfair discrimination by the local manager, on which it would express no opinion. It also considered the amounts of monthly pay suggested by the employes as excessive, and those suggested by the company, low, the revenue being satisfactory and the margin of profit a fair one, though it contended that the financial position of a company should not be the deciding factor in arriving at a fair wage scale. It was unanimously recommended that from May 1, 1917, the minimum wage paid be $45 a month, after a year of service, $50; after 2 years, $55; and after 3 years, $60; that the company investigate the accommodation furnished on the vessels and see that the terms of the contract are adhered to and that complaints of poor accommodation receive prompt attention; that after a year of service each employe be granted 2 weeks holiday in each year with full pay, or in lieu thereof, 2 weeks pay extra; that each employe be granted $30 annually for

uniform, payable half yearly, and that there be no discrimination against union or non-union men, and also that an employe wishing to make a complaint be entitled to be represented by whomsoever he may choose to appoint.

Telegraph, Telephone and Cable Matters.

H. Bott, formerly of the C.P.R. Telegraphs staff, Toronto, has been apopinted Inspector at Edmonton, Alta.

The Great North Western Telegraph Co.'s employes met in Toronto, July 23, and decided to apply for the apopintment of a conciliation board to enquire into the demands for improved working conditions and increased wages.

W. Marconi, G.C., V.O., who is serving in the Italian Army, and who is at present attached to the Italian mission to the U.S., has been given the honorary degree of Doctor of Science by Columbia University.

S. Hutchison, who died at Winnipeg recently, was appointed local manager, Great North Western Telegraph Co., there, in 1890, and on the inauguration of the Grand Trunk Pacifiic Telegraph Co., was appointed city manager there, later being transferred to Prince Rupert, B.C., returning to Winnipeg in Aug., 1916, as circuit manager, which position he held at the time of his death.

The Great North Western Telegraph Co. has opened offices at Lake St. Joseph Hotel, Little Metis Beach, and Pointe au Pic, Que.; Alderdale, Brent, Cardinal Canal. Crystal Beach, Dwight, Field, Helderleigh, Lake Joseph Station, Nelles Corners, Petewawa Camp, Royal Muskoka Hotel and Sparrow Lake, Ont.; and has closed its offices at Athens, Campbellford, Carleton Place and Merritton, Ont., and Jasper, Alta.

Among the Express Companies.

The Dominion Ex. Co. gave recently to employes who had been in the company's service for one year and on salary of less than $2,500 a year, a bonus of 10%, and to those who had been in the service over one year, 20% of their salaries.

The Dominion Ex. Co. is reported as declining to carry shipments of intoxicating liquor to points outside the province of Alberta from within, and it is reported that certain intrests contemplate taking action against the company for such refusal.

V. G. R. Vickers, whose retirement from the Dominion Ex. Co.'s service was announced in our last issue, was, on June 30, presented with a silver service, with a diamond pendant for Mrs. Vickers, by the eastern division officers and employes, a gold watch and fob by the western division officers and employes, and a cheque by the directors of the company.

A. J. Seaton, who has been appointed Assistant Superintendent, Eastern Division, Canadian Ex. Co., Montreal, entered the company's service in 1886 as clerk at Galt, Ont. From 1887 to 1901 he served as train messenger; from 1901 to 1908, joint agent, Canadian and American Ex. Cos.; 1908 to 1912, route agent, Eastern Division, Canadian Ex. Co.; and 1912 to June 16, 1917, Assistant to Superintendent, Eastern Division, same company.

Z. N. Middleton, agent, Canadian Northern Ex. Co., Vancouver, B.C., was defendant in an action at Chilliwack, B.C., July 11, by Jas. Cartnell and several other valley fruit growers, for the recovery of the difference between the price of a carload of prunes and the price realized by auction sale in Winnipeg, after the carload had been refused by consignees. For the plaintiffs it was stated that Z. N. Middleton represented that he acted as an agent for the consignees, and for the defence it was claimed that he acted simply in his capacity as agent for the express company, and in the course of his business had found a market for plaintiffs' fruit.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Vapor Car Heating Co., Inc., Chicago.—A. D. Bruce, heretofore in charge of purchases and supplies, has been elected Secretary and Comptroller, vice A. P. Harper, resigned.

Canadian Ingersoll-Rand Co., Ltd., Montreal, has issued Bulletin E-300-A, illustrating power driven, single stage, straight line air compressors, designed for motor or belt drive and furnished with a special short belt drive where floor space is a consideration. They are intended for use in industrial and mining plants where units of 950 cu. ft. displacement and under a minute are required. Eighteen sizes are built giving a wide range of choice. The leaf inlet, and outlet, valves and the dust proof, self oiling and self contained construction of this type of compressor are fully described.

Canadian Fairbanks-Morse Co., Ltd., Montreal, has issued a catalogue, under the title "F.-M. Book," containing 1,048 pages and nearly 4,700 illustrations. It deals with articles handled in 12 distinct departments, viz.: railway and contractors department, machine tools, woodworking machinery; transmission department, engines, electrical goods, scales, valves and steam goods; supply department, safes and vaults, pumps, automobile accessories and motor fittings. The book is very completely indexed and contains a considerable amount of reference information in tabulated form.

National Steel Car Co., Ltd., Hamilton, Ont. Basil Magor, Vice President and General Manager, having resigned, J. E. McAllister, consulting engineer, Toronto, has been appointed to succeed him, with the same title. The other officers are: President, Sir John Gibson; Vice President, Sir Henry Pellatt; Secretary-Treasurer, T. O. Scott; Works Manager, B. B. Hamilton. In February last, owing to Mr. Magor's absence in Europe, one of the directors, Samuel King, of London, Ont., accepted the post of Managing Director temporarily ,and is still acting in that capacity(but he hopes to be relieved of the responsibilities at an early date.

The Pennsylvania Rd. has given the Westinghouse Electric & Manufacturing Co. a contract for furnishing the electrical equipment for the hotel being erected at 7th Ave. and 33rd St., New York, N.Y., which will, it is said, when completed, be the largest hotel in the world, containing 2,200 rooms, each with a bath. The hotel is being erected by the Pennsylvania Rd. and will be operated under the Statler management. The electrical equipment will consist of 44 ventilating motors, with a total capacity of over 800 h.p.; 7 pump motors, with a capacity of over 200 h.p., and an additional number of motors for refrigerating machinery. The contract also includes three 500 k.w. rotary converters, transformers and switching equipment, and six 250 kva. transformers for the substation, to which alternating current will be supplied from the railroad company's power house.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

month, 8.30 p.m., except June, July and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill. Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street. Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Church Street, Vancouver, B.C.

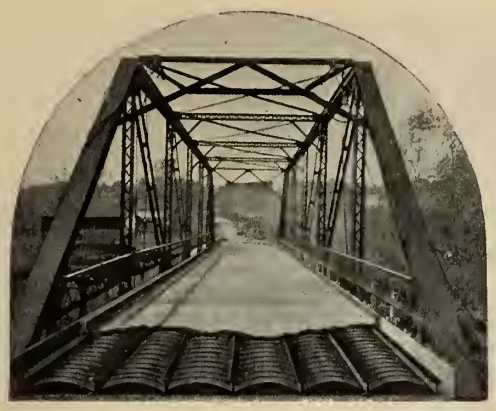
Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.

Western Canada Railway Club—Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.

Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

Vessel "Accidents" on the Great Lakes.—It is announced that U.S. Government agents are investigating some recent casualties to U.S. vessels on the Great Lakes, as the view is held that they were caused by the enemy. They have mostly occurred in the neighborhood of the Sault Ste. Marie canals, and taken in conjunction with a number of cases of tampering with locks and buoys, it is believed that some attempts have been made to block the canals and thus suspend traffic. The reports state that some persons when pursued have escaped to the Canadian side, but that Canadian assistance has been sought and an agreement is to be made under which fugitives may be pursued across the boundary line in order to avoid delays due to extradition proceedings.

The United States Railroads War Board has created a subcommittee consisting of vice presidents of the different express companies to coordinate the work of the companies with the general probnotes coming due July 18, and will have the same collateral as under that issue, consisting of first mortgage bonds guaranteed principal and interest by the Dominion of Canada or Canadian provincial governments."



Better Bridges at Lower Cost

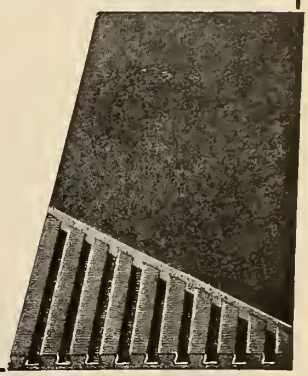
There is one outstanding reason why the leading road engineers and contractors have adopted Pedlar's Ferro-Dovetail system of interlocking concrete reinforcement for bridge floors and all extraordinary building. Pedlar's Ferro-Dovetail Plates produce such a low dead-load as to make for stronger, more durable, more dependable and lighter construction.

PEDLAR'S FERRO-DOVETAIL PLATES

The plates are laid between the beams or on bearings and the right mixture of concrete is applied and stamped in. On this the paving brick, stone, asphalt or other finish is applied, after which the under side of the metal is plastered.

Pedlar's Ferro-Dovetail Plates are supplied straight or curved for floors, and are therefore desirable for any form of construction. They show no deflection under loads far exceeding any possible requirements.

Made of 28 to 22 gauge steel or anti-corrosive Toncan Metal and formed into a series of ten lateral corrugations dovetailed in shape. The tapered sides of the dovetail shape corrugations make for an infallible clinch with the concrete and plaster. The plates are thus protected from the influence of air, water, gas and acid fumes—cannot corrode. Safe and economic. Write to-day for Pedlar's Ferro-Dovetail Pamphlet R.M.



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(ESTABLISHED 1861)
Executive Offices and Factories: Oshawa, Ont.
Branches: Montreal, Ottawa, Toronto, London, Winnipeg, Vancouver.

Are You in the Market for Trolley Catchers, Retrievers, Bases or Head Lights

We manufacture Knutson No. 5 Trolley Retriever, Knutson No. 2 Trolley Retriever, The Ideal Trolley Catcher, The Simplex Trolley Base, The Peerless No. 10 Roller-bearing Trolley Base, The Peerless Check Valve, The Peerless Junior Head Light, The Perfect Head Light, The Hollis Safety Fender, No. 3 Detachable Fender.

Trolley Supply Co.
CANTON, OHIO

It Pays to carry an advertisement in the Canadian Railway and Marine World every issue of the year because you obtain proportionately better **Results**

Dominion Coal Company Limited

"Dominion"
and
"Springhill"
Steam and Gas Coals

General Sales Office
112 St. James Street
MONTREAL

STANDARD
Wires and Cables

Wire Rods,
Bare Copper Wire,
Copper and Brass Tubes,
Brass and Bronze Wires,
Standard C.C.C. Wire,
(Colonial Copper Clad)
Magnet Wire,
Weatherproof Wire,
Rubber Insulated Wires,
Varnished Cambric Cable,
Fibre Lead-Covered Cable,
Paper Lead-Covered Cable,
Rubber Lead-Covered Cable,
Armored Cable,

and Cable Accessories

Cable Terminals,
Cable Junction Boxes,
"Ozite" Insulating Compounds,
Miscellaneous Cable Accessories of all Kinds,
Cable Installations.

For detailed information, samples, estimates or prices, write our nearest office.

Standard Underground Cable Co. of Canada, Limited
Hamilton, Ont.
Montreal, Que. Seattle, Wash.
Winnipeg, Man.

Car Closets
Flush or Dry
DUNER CO. 101 S. CLINTON ST. CHICAGO

"You Have the Cleanest Road in America

is the compliment recently given to the Buffalo, Rochester & Pittsburgh Railway Company. This is largely due to the thorough methods of collecting scrap, and this is greatly facilitated by the efficient handling systems at the scrap yards. Brownhoist Cranes do this work of unloading, sorting and reloading. Equipped with lifting magnet, this crane handles iron and steel scrap at a cost 80 per cent. less than what it would cost to do this work by hand.

Brownhoist Cranes are used because 25 years' records have proven that they can be depended upon working day and night if necessary. They may cost more, but soon pay for the difference.

The Brownhoist Crane is fully illustrated and described in Catalog I, which will be sent upon request.

The Brown Hoisting Machinery Co.

CLEVELAND, OHIO.

Engineers and manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller cranes and hoists.

Branch offices in New York, Pittsburgh, Chicago, San Francisco and (Portland, Ore., Colby Engi. Co.)

Northern Electric

Trolley Wire

What happens when the winter storms hits your line? Do you depend on an inferior grade of trolley wire, or will your equipment stand up under any test?

We manufacture all standard sizes of round and grooved trolley wire. Special attention in the drawing of the wire assures a product of the highest possible tensile strength and wearing qualities. The chance of disorganized traffic, due to a broken wire—with consequent loss of revenue, and ill-feeling of the public—is thus reduced to a minimum.

We also manufacture all other classes of wires and cables used in electric railway work, such as Bare and Insulated Feeder Cables, Bonding Cables, Lead-covered Feeder Cables, Special Rubber-insulated Wires and Cables for Car Wiring, Magnet Wire for Repairing Motors, etc.

Our nearest house will gladly quote on your requirements.

Northern Electric Company
LIMITED

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Regina Calgary Vancouver

COAL SAVING IS IMPERATIVE

A coal saving of 15% is shown in actual tests of high superheat on the Lehigh Valley R.R. Co's tug Perth Amboy.

Apply these figures to your fuel costs.

Come and talk to our engineers.

Locomotive Superheater Co.

30 Church Street, New York
Peoples Gas Bldg., Chicago

	PERTH AMBOY	
	Saturated Steam	Superheated Steam
Duration of Test	47 hr. 35 min.	54 hr. 0 min.
Total Tonnage of Tow	3322	3502
Boiler Pressure Av.	186	187.8
M. E. P. H. P. Cyl. Av.	63.5	82.8
" " " I. P. " "	40.6	39.7
" " " L. P. " "	13.7	15.4
Ref. M. E. P. " "	37.9	42.5
Vacuum (Inches) "	24.3	21.8
R. P. M. "	93	94.8
I. H. P.	**775**	**887**
Pressure I. P. Rec. Av.	72	65.7
" L. P. " "	16.4	15.4
Steam temperature at throttle (deg. F.) Av.	382	527
Steam temperature at throttle (deg. F.) Max.	382	608
Coal per hour—lb.	2024	1968
Coal per I. H. P. hour—lb.	**2.61**	**2.218**
Fuel Economy—per cent	—	**15%**
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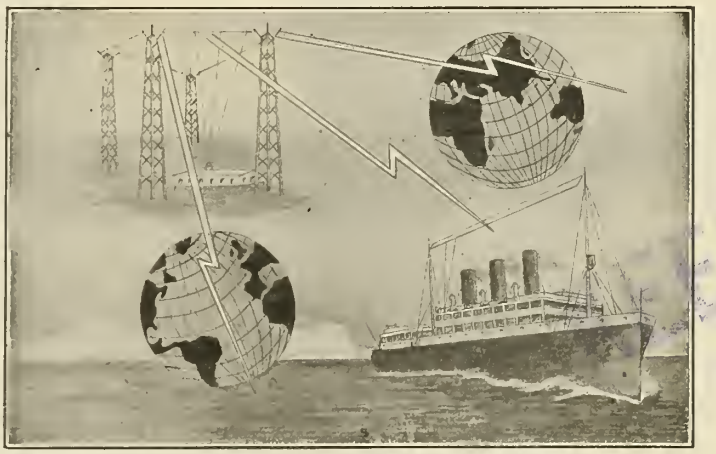

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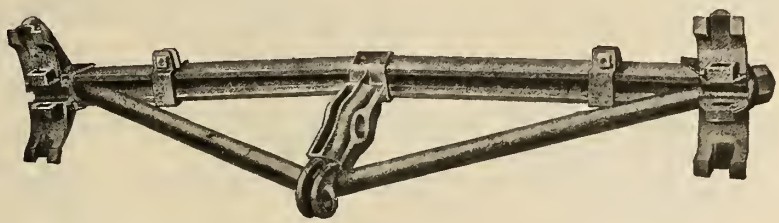

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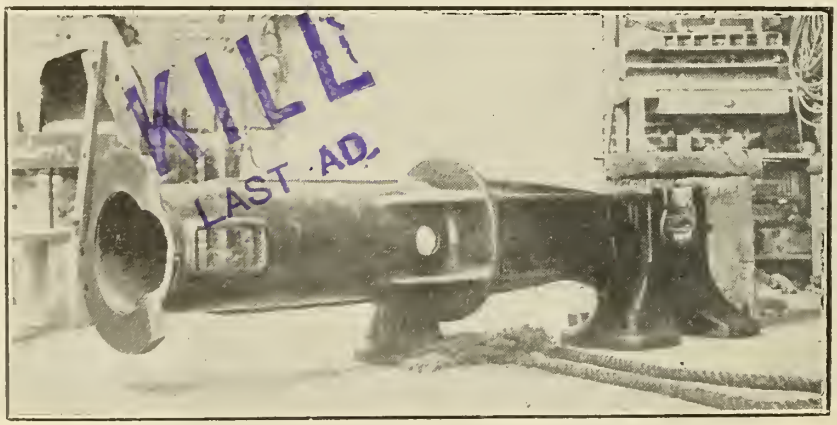

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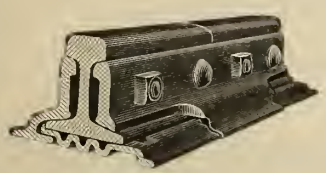

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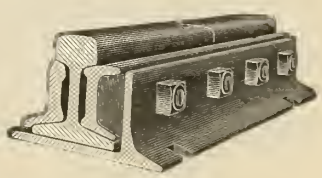

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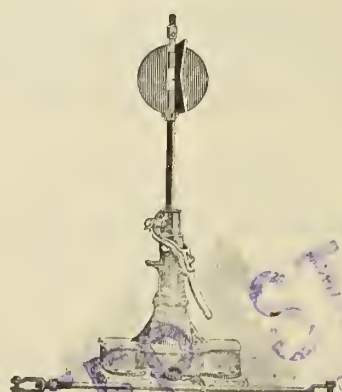

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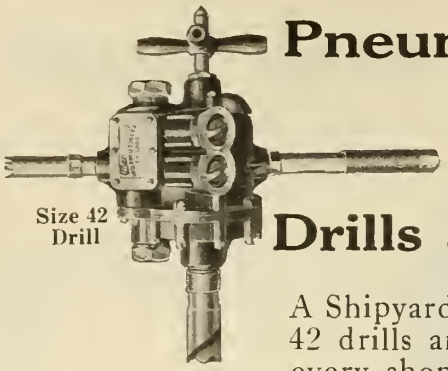
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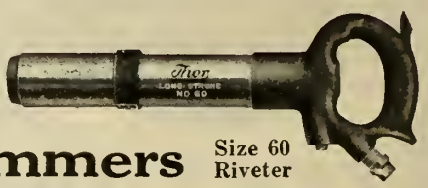

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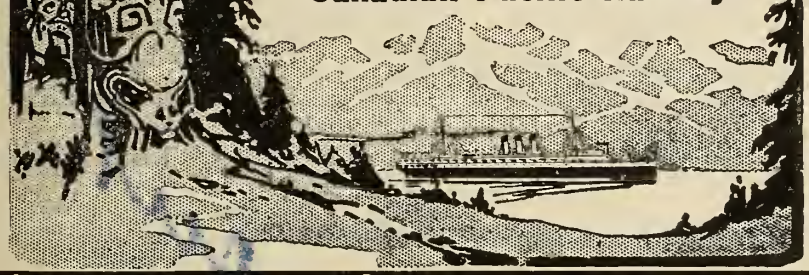

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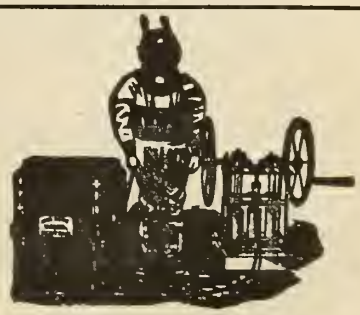

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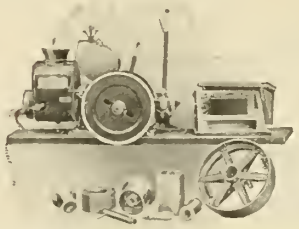

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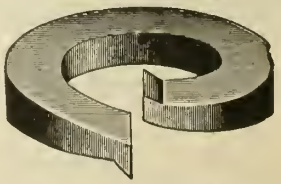

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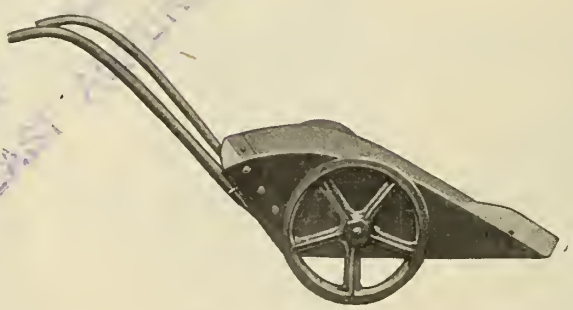

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For

Canuck Supply Co., Limited

Montreal
Toronto
Winnipeg

marked

Canadian Railway AND Marine World

ESTABLISHED 1898.

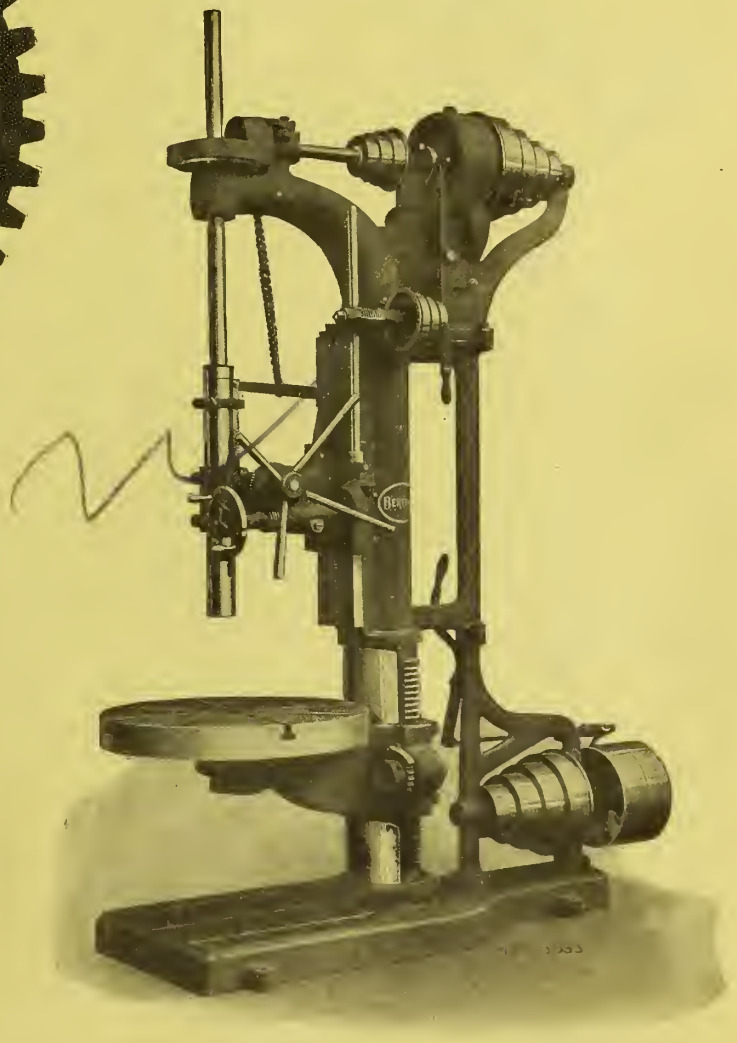
Number 235 TORONTO, CANADA, SEPTEMBER, 1917 Subscription Rates, Page 359

Bertram MACHINE TOOLS

30-Inch Vertical Drilling Machine

Photographs and full particulars gladly mailed upon request.

WRITE US NOW



Locomotive and Car Shop Equipment

Structural and Bridge Shop Machinery

Repair Shop Machinery

General Machine Shop Equipment

We'll be pleased to submit photographs and full details on any line or lines in which you are interested.

The John Bertram & Sons Company, Limited

DUNDAS, ONTARIO, CANADA

MONTREAL 723 Drummond Building

TORONTO 1002 C.P.R. Building

VANCOUVER 609 Bank of Ottawa Building

WINNIPEG 1205 McArthur Building

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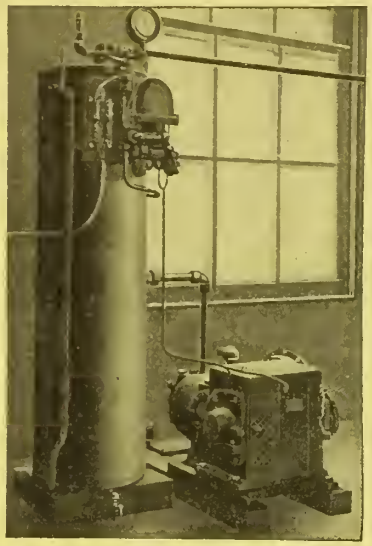
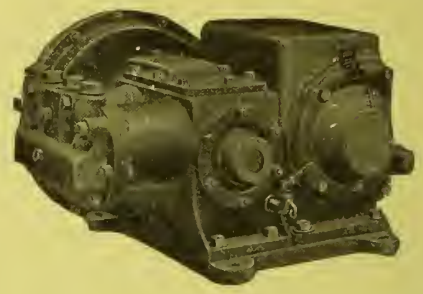
Westinghouse



A Westinghouse Motor-Driven Compressor Installation.

Motor-Driven Air Compressors For Industrial Service

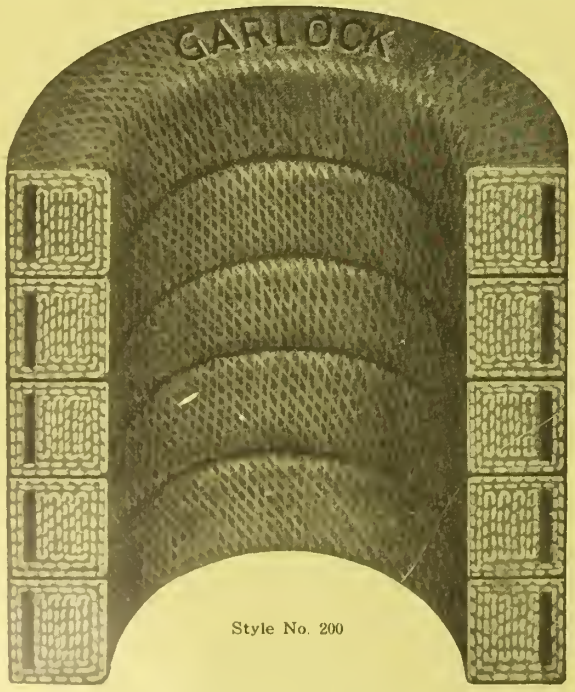
Built in four standard capacities rated at 14½, 25, 37½ and 50 cubic feet of free air per minute, and fitted with Direct Current Motors for 110, 220 and 600 volts.



Our National line of compressors can be furnished for alternating current in all standard voltages and frequencies.

Canadian Westinghouse Co., Limited, Hamilton, Ont.

TORONTO, Traders Bank Bldg. MONTREAL, 52 Victoria Sq. OTTAWA, Ahearn & Soper, Ltd. HALIFAX, 105 Hollis St. FT.WILLIAM, Telfer Bldg.
WINNIPEG, 158 Portage Ave. E. CALGARY, Grain Exchange Bldg. VANCOUVER, Bank of Ottawa Bldg. EDMONTON, 211 McLeod Bldg.



Style No. 200

Garlock High Pressure Piston Rod Packing

Is built up in rectangular form and uniform shape and exact sizes are thereby obtained.

Asbestos packing, which is rolled around a rubber core and afterwards distorted by running through a square die, does not retain its shape or size.

The best materials we can buy are used in the manufacture of our high pressure packing.

The length of service obtained from it is greater than that secured from other makes, therefore the labor cost of applying and adjusting is less.

Our packings are sold at net weights; weights of tubes and boxes are not included.

Every pound of our high pressure packing carries with it the Garlock guarantee of satisfactory and economical service.

We will promptly replace or refund the cost of any of our packings which may prove unsatisfactory to our customers.

KILL LAST AD.

THE GARLOCK PACKING COMPANY - Hamilton, Ontario

Branches :
Montreal, Que., 342 St. James St. Toronto, Ont., Continental Life Bldg.
Winnipeg, Man., Galt Building

GENERAL RAILWAY SIGNAL COMPANY
OF CANADA LIMITED

Railway Operating Engineers, Manufacturers and Contractors
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling
Electric Interlocking

Electric Interlocking

Mechanical Interlocking

Highway Crossing Gates

Highway Crossing Bells

A-P-B. Automatic Block Signals for Single Track

A-C. and D-C. Automatic Block Signals for Double Track

Advantages of Absolute-Permissive Block Signaling (A-P-B)

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signaling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.

Head Office and Works
LACHINE, QUEBEC

Galena-Signal Oil Company

Works

Franklin, Pa., and Toronto, Ont.

Canadian Representative—Robert McVicar, 603 Shaughnessy Bldg., Montreal, Que.

Sole manufacturers of the celebrated GALENA COACH, ENGINE and CAR OILS, and PERFECTION VALVE and SIGNAL OILS.

GUARANTEE COST per thousand miles for from one to five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organization of skilled railway mechanics of wide and varied experience. Services of Experts furnished free of charge to patrons interested in the economical use of oils.

STREET RAILWAY LUBRICATION A SPECIALTY

USE

Galena Railway Safety Oil

in Headlights, Marker and Classification Lamps, to secure Efficiency of Service, Maximum Candle Power, Clearness of Light.

Galena Long Time Burner Oil

for use in Switch and Semaphore Lamps, and all lamps for long time burning, to avoid smoked and cracked chimneys and crusted wicks.

Tests and Correspondence Solicited.

THE CANADIAN FAIRBANKS-MORSE COMPANY, LIMITED.

CANADA'S DEPARTMENTAL HOUSE FOR MECHANICAL GOODS

Ship Builders' Machinery and Supplies

Quick production in Ship Building as in any other manufacture requires modern machinery and equipment.

Fairbanks-Morse Machinery is just what you need. Built for heavy work, it will stand up against the severest usage, and continue to perform the work required of it.

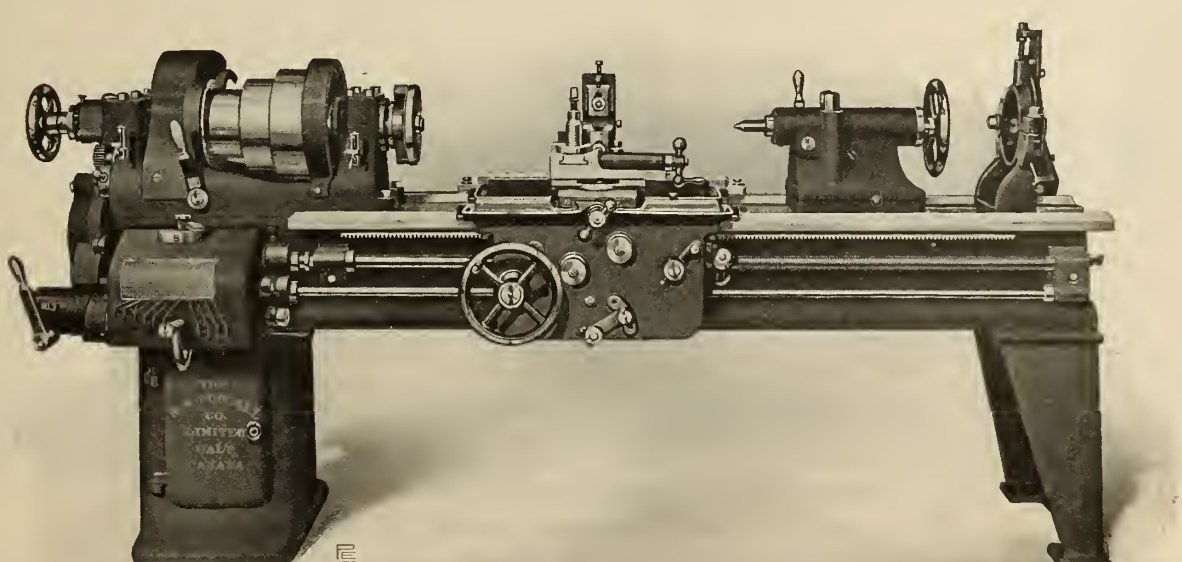
Let us quote on your requirements of Machine Tools, Wood Working Machinery, Valves, Pipe and Fittings, Small Tools of all kinds, etc., etc.

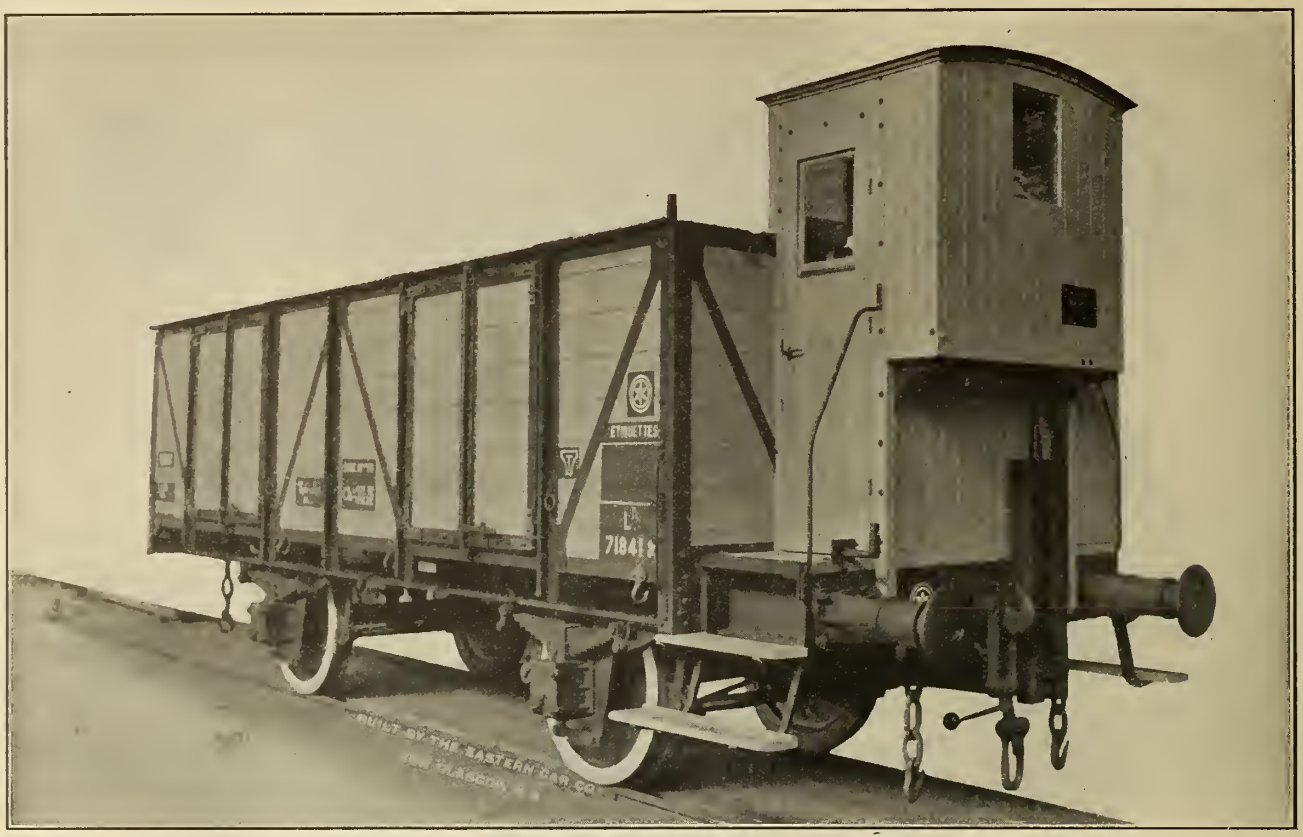
KILL LAST AD

The Canadian Fairbanks-Morse Co., Limited

"Canada's Departmental House for Mechanical Goods"

St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Windsor, Winnipeg, Saskatoon, Calgary, Vancouver, Victoria.

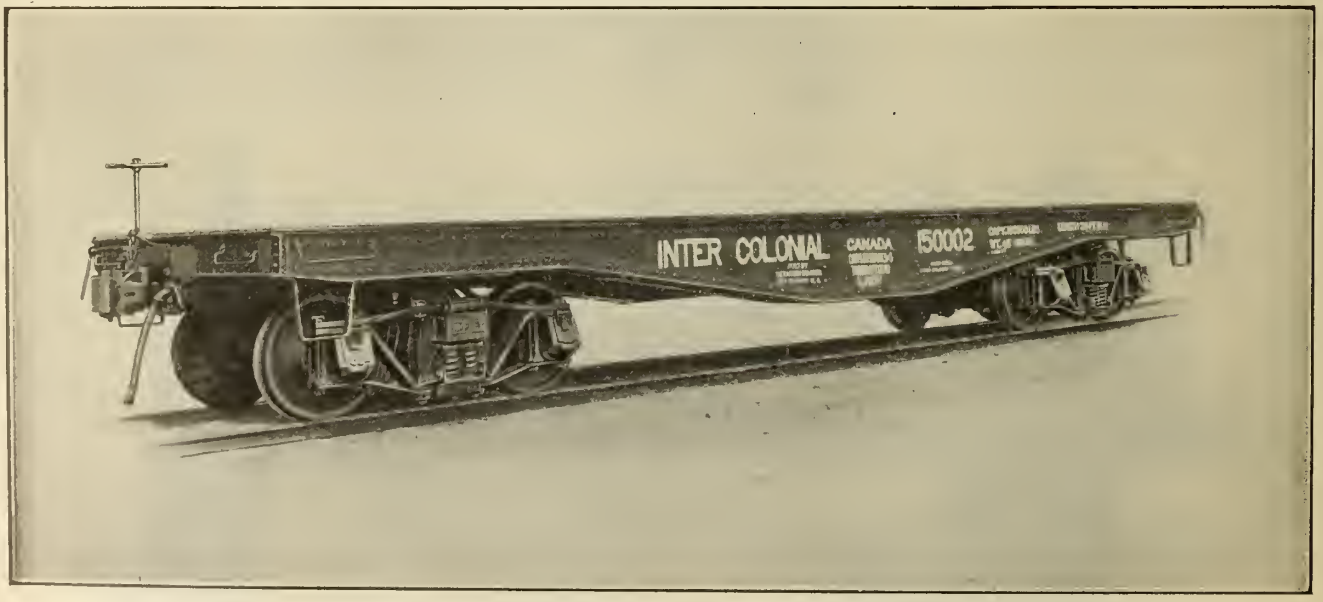




ONE OF 2,000 GONDOLA CARS NOW UNDER CONSTRUCTION FOR THE FRENCH GOVERNMENT.

FREIGHT CARS TO FOREIGN ORDER

We have unexcelled water and rail shipping facilities for the export of freight cars of all types abroad or to United States markets. Our manufacturing capacity reaches to 40 cars per day. Although fully employed in filling and conducting negotiations for further foreign orders, our exceptional output facilities enable us both to take care of these and others in the order in which they are received.



75 TON SPECIAL PIT CAR FOR CANADIAN GOVERNMENT RAILWAYS.

FLAT CARS, CABOOSES, AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

Eastern Car Company, Limited

General Offices and Works, New Glasgow, N.S. **Montreal Office, Room 14 Windsor Hotel**

Steamer War Wasp

First steel ocean-going steamer built in the Maritime Provinces.

Nova Scotia Steel & Coal Company

LIMITED

Head Office - New Glasgow, Nova Scotia

Destroyed nov 11/20

THE coaling machinery broke down at the terminal of one of the western roads. Some other method of coaling had to be found at once to coal the engines,—schedules could not be disrupted. So a call was sent for the Brownhoist Locomotive Crane working at the shops. The crane was brought up along side the cars of coal, and 18 engines were coaled in 5 hrs. And all trains went out on schedule.

But suppose the locomotive crane had failed,—then the railroad would have been badly crippled. Railroads are realizing more and more the importance of using good locomotive cranes in all departments. It pays.

Brownhoist Cranes are well designed and strongly built,—and the 25 years' records prove it. You can depend upon Brownhoist Cranes. They may cost more, but are worth it.

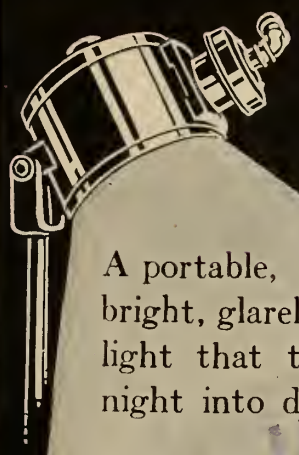
Catalog I shows and describes the Brownhoist Crane in detail and shows how and where some of them are used. This catalog will be sent upon request.

The Brown Hoisting Machinery Company

Cleveland, Ohio, U.S.A.

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller Cranes and Hoists

Branch Offices in New York, Pittsburg; Chicago, San Francisco, and (Portland, Ore., Colby Eng'r Co.)



ELECTRIC DAYLIGHT

WITH THE

Northern Electric

DAVIS

FLOOD LAMP

A portable, bright, glareless light that turns night into day.

It can be diffused over large areas or projected in a solid beam.

The light that lights Niagara

These Flood Lamps are ideal for lighting railroad terminals—freight yards—round houses—transfer yards and platforms—wrecking equipment – wherever working light is needed.

They can be used anywhere—no arc lamp trimming—no moving parts—no permanent wiring.
Write for our folder and tell us your lighting problems.

Northern Electric Company

LIMITED

MONTREAL OTTAWA WINNIPEG CALGARY
HALIFAX TORONTO REGINA VANCOUVER

We Have No Coal

B U T

We can help you to make your present stock go farther, last longer and do more work per ton.

That will save you money and coal. In fact it is like **finding** a little **extra** coal for you.

Anchor Steam Hydraulic Packings stop leaks, save steam and water and save coal.

Let us supply you with a little extra coal through the use of Anchor Packings.

Montreal
Toronto

CANUCK SUPPLY COMPANY LIMITED

Winnipeg
Vancouver

Do Not Hesitate

BUY THE "BEST"

"DOMINION" Wire Rope

FOR DREDGES

The Dominion Wire Rope Company, Limited

Winnipeg Montreal Toronto

General Service Cars

Otis Dump Cars

For Standard or Special Service

KILL 1ST AD.

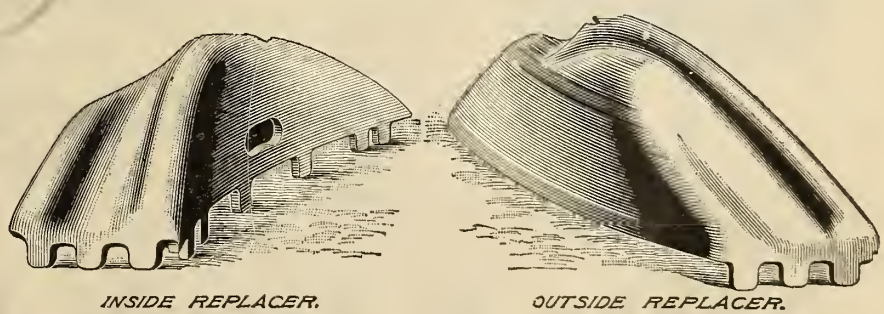
The HART-OTIS CAR CO., Limited, MONTREAL

–SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA–

"Alexander" Car Replacers

Re-rail your Rolling Stock without calling out the WRECKING CREW.
Will RE-RAIL the heaviest locomotive.

Velocipedes,
Push Cars,
Hand Cars,
Track Tools



INSIDE REPLACER. OUTSIDE REPLACER.

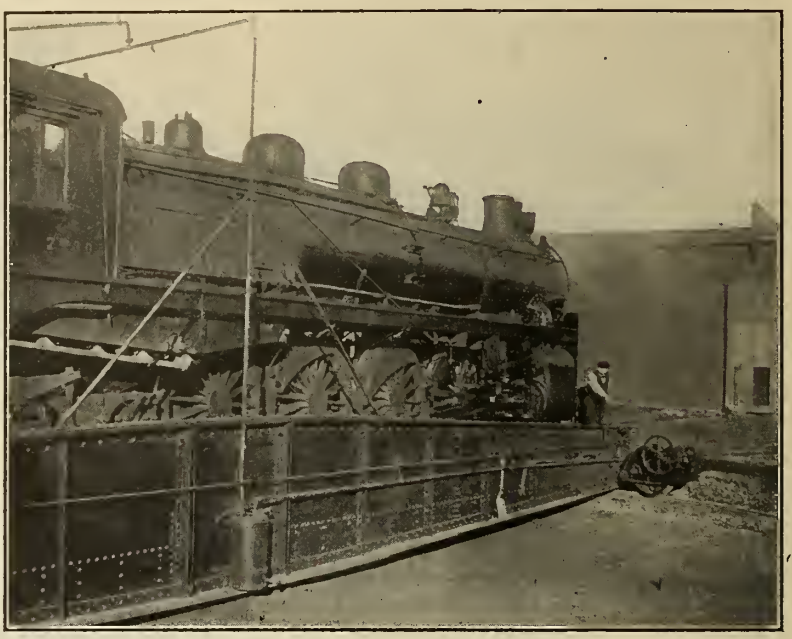
Branch:
108 Mail Building
TORONTO

F. H. Hopkins & Co

Head Office:
MONTREAL

The Canadian Pilling Tractor

is operated successfully from the Atlantic to the Pacific. Operated by either air or electric motor.

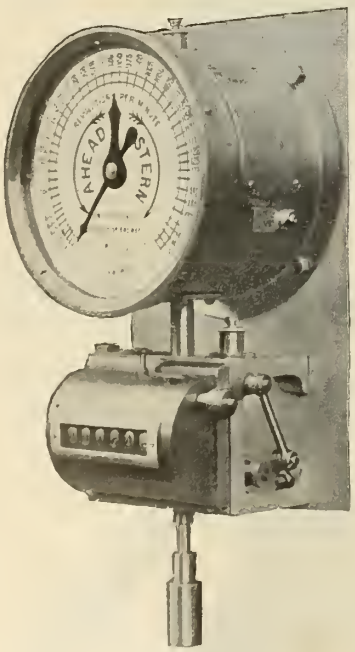


Made in Canada

Canadian Pilling Turntable Tractors

Taylor & Arnold, Limited

Montreal **Winnipeg** **Vancouver**



Engine Room Indicators (Speed)

Engine Counters

Ships Telegraphs for Engine, Twin Engine, Stokehold, Steering and Docking

Chadburn's (Ship) Telegraph Co'y, Ltd.
Bootle, England

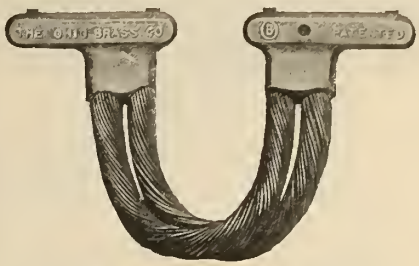
Made in Canada *Sole Canadian Agents*

Taylor & Arnold, Limited

Manufacturers of Railway and Marine Specialties

Montreal **Winnipeg** **Vancouver**

O-B GAS-WELD BONDING—Takes a Minimum of Men



O-B TYPE G. W. BOND
(All Copper)

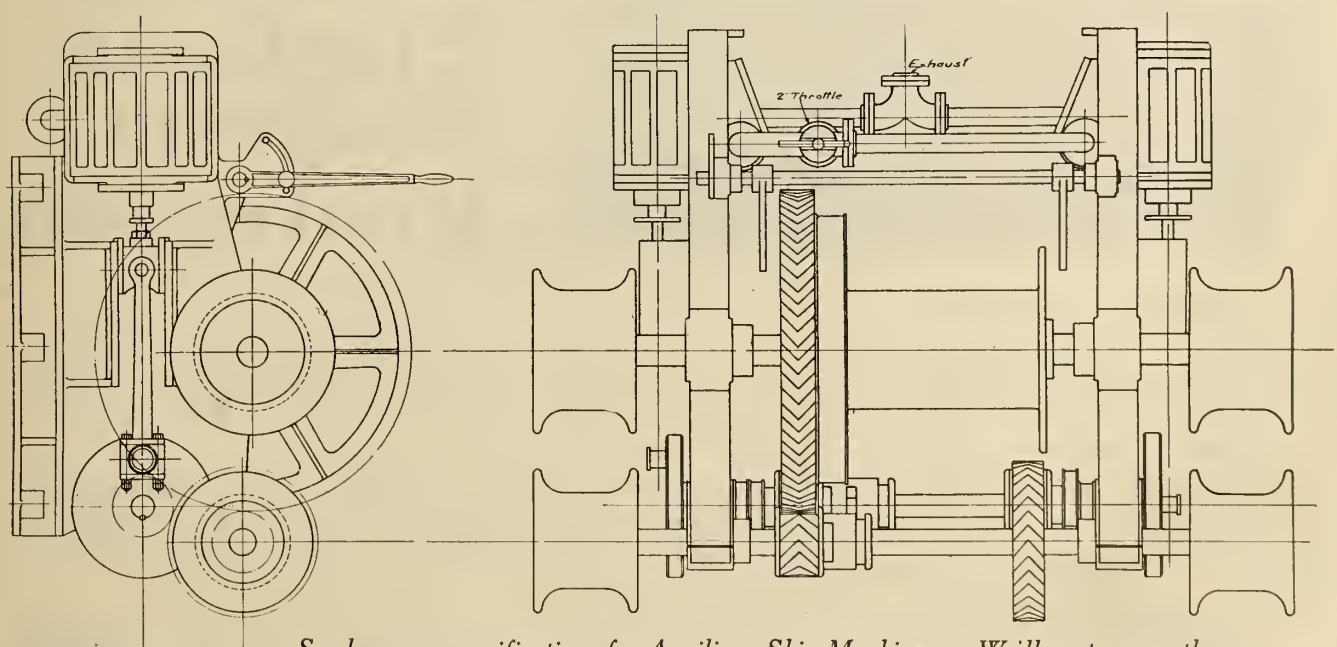
Two men are a full crew with the O-B Gas-Weld Bonding Process. One man does the actual welding while the other clamps the bond on the rail and helps handle the equipment.

Since it is simple, the equipment may be mounted in any convenient manner—on a heavy car if there is no traffic or on a light truck or even a cradle if traffic interruptions are frequent.

Send for a booklet which tells all about O-B Gas Weld Bonds.

The Ohio Brass Co., Mansfield, Ohio

Cargo Winches, Trawl Winches, Anchor Windlasses, Ash Hoists, Dock Winches, Derricks, Etc.



Send us your specifications for Auxiliary Ship Machinery—We'll quote promptly.

M. BEATTY & SONS, Limited, Welland, Ont.

SCALE

The object of the many expensive devices that are applied to locomotives for the purpose of saving fuel is defeated by scale gradually building up on the heating surfaces of the boilers.

It has been proven by careful investigation that the loss of efficiency due to scale formation is much greater than is generally known. Incrustation ranging from 1-32nd to 1-16th of an inch thick causes a loss of from 7 to 15% in heat units.

Investigation will show that the cost of **Dearborn Treatment** necessary to prevent scale formation is a small percentage of the saving that it is possible to make by keeping the heating surfaces of the boilers clean.

Send gallon samples of the water supplies for analysis and further information.

Dearborn Chemical Company of Canada, Limited

1220-1230 Dundas Street, TORONTO, CANADA

Perishable Products Properly Protected

The **MOORE SYSTEM** of Refrigeration, Heating and Ventilation provides the greatest measure of protection in **all** seasons.

The **MOORE SYSTEM** is economical—provides 20% more loading space, requires 20% less equipment, and 20% less operation and repairs.

The **Refrigerator** is dry and refrigerates all the load with one-third less ice.

The **Heater** protects all the load against frost in coldest weather. It constantly supplies fresh air and removes gases, fumes and odors. It keeps the load fresh and prevents wilt, shrivel, smoke, taint or freeze. It is operated from outside the car, is simple and requires no special attendant. It **can** be used in **any** refrigerator car, and **should** be used in **all** refrigerator cars.

It is the system that reduces damage claims to a minimum.

Refrigerator, Heater and Ventilator Car Co.

St. Paul, Minnesota

See the

Canadian Northern Rockies

en route to the PACIFIC COAST

by the Natural Wonders of Jasper Park
and Mount Robson, Monarch of the Range

You will be amply repaid. Convenient Train Service. Summer Tourist Fares.

For through tickets, information and our handsome Mountain Booklet apply to nearest C.N.R. Agent or General Passenger Dept., Montreal, Que., Toronto, Ont., and Winnipeg, Man.

CANADIAN NORTHERN RAILWAY

Make Uncle Sam's Standard Your Standard

After Careful Complete and Conclusive Tests Uncle Sam Has Officially Adopted Craftsman Quality No. 1

DU PONT FABRIKOID

REG. U. S. PAT. OFF.

The U. S. Standard Ship Upholstery Material

The best upholstery material for ships is obviously the best for railroads—Uncle Sam's O. K. is a splendid guide for you.

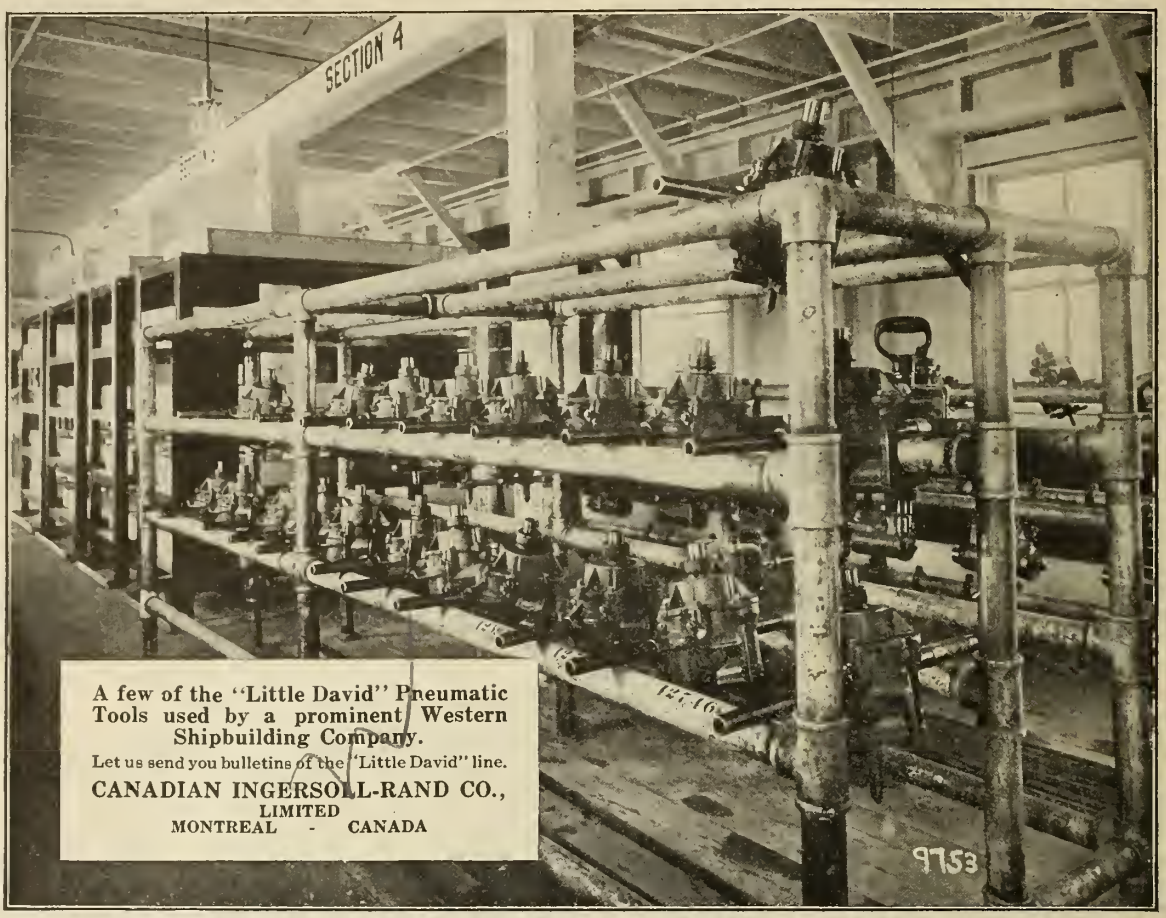
Fabrikoid offers you the same economies it offers your government—it is good business to accept them.

Prices and Samples on Request. A Trial Order is convincing.

Du Pont Fabrikoid Company, Wilmington, Del.

WENDELL & MACDUFFIE CO.

Railroad Department Representatives : 61 Broadway, New York

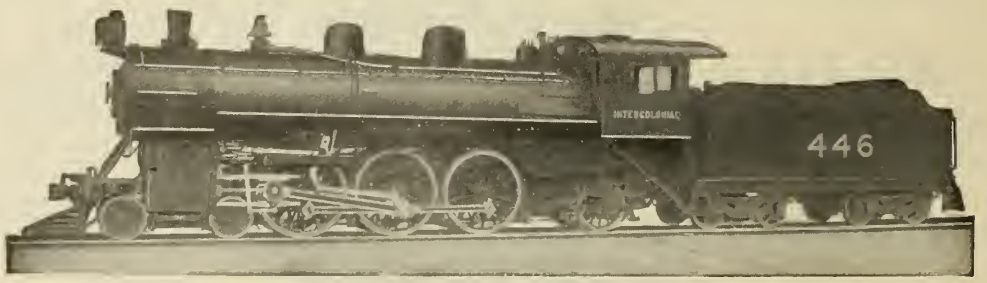


A few of the "Little David" Pneumatic Tools used by a prominent Western Shipbuilding Company.

Let us send you bulletins of the "Little David" line.

CANADIAN INGERSOLL-RAND CO., LIMITED
MONTREAL - CANADA

Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE—INTERCOLONIAL RAILWAY
Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

MANGANESE
Special Track Work

FOR

STEAM and ELECTRIC
RAILWAYS

We invite your enquiries for 1917 requirements.

Canadian Steel Foundries, Limited

P.O. Box 1630 - MONTREAL

Port Arthur Shipbuilding Co., Limited

Port Arthur, Ont.

Designers and Builders of every type of vessel, for both Great Lakes and Salt Water Service. 700 ft. solid concrete dock for repair work of every description.

Most Modern Ship Building Plant on the Great Lakes

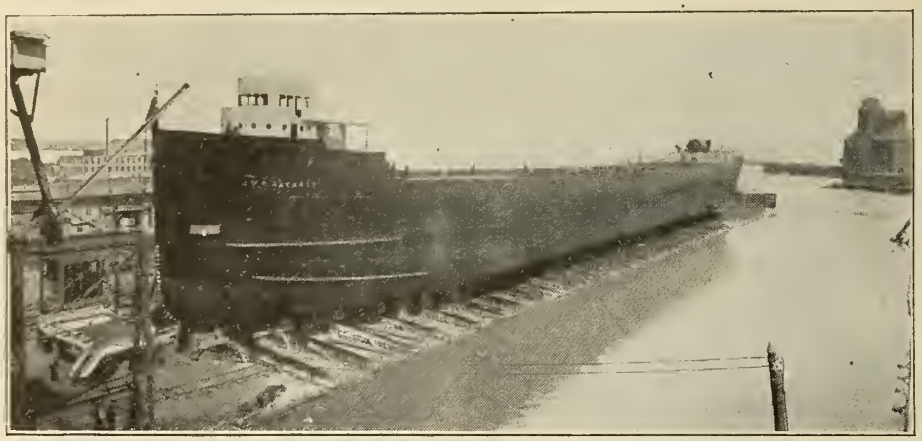
The Collingwood Shipbuilding Co.

Limited

COLLINGWOOD—ONTARIO—CANADA

Steel Ships, Engines, Boilers, Castings, and Forgings

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK



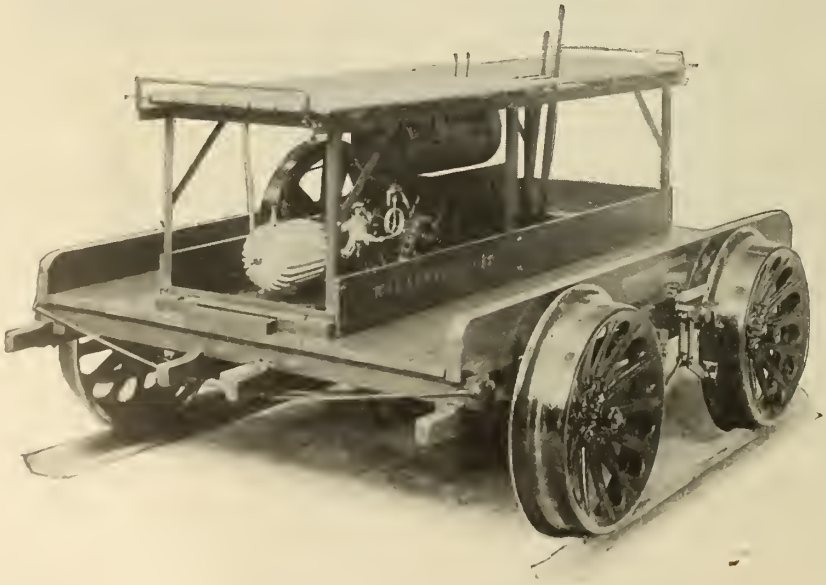
Steamer J. H. G. HAGARTY

Two Dry Docks
and
Shops

EQUIPPED TO
OPERATE

Day or Night
on
Repairs

Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

Kalamazoo Railway Supply Company

KALAMAZOO, MICH., U.S.A.

Norton Jacks

For all Classes of Service

10 to 100 Tons Capacity

In Stock for Immediate Shipment.

Send for Illustrated Catalogue No. 29.

A. O. Norton, Limited

Coaticook, Prov. Que., Canada

Stock Carried by Canadian Agents: MUSSENS LIMITED
Montreal Toronto Winnipeg Cobalt Calgary Vancouver

50 YEARS IN THE BUSINESS

OVER 60,000,000 FILES A YEAR

The Better the Mechanic the More He Appreciates Good Tools

That's because pride of craftsmanship is natural to every man.

If filing is to be done—give your men Famous Five Files.

They know from experience that they are good tools. Consequently will respect your judgment in purchasing them.

They are made from high carbon steel—efficiently heat treated, and cut. Their qualities are standardized and therefore reliable.

Specify them when ordering. They are:

Kearney & Foot **Great Western**
American **Arcade** **Globe**

Made in Canada By

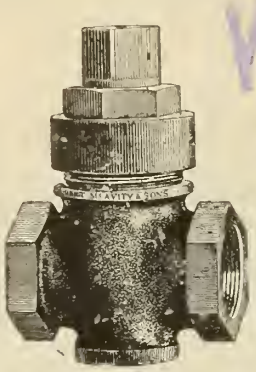
The Nicholson File Company
PORT HOPE **ONTARIO**

Established 1834

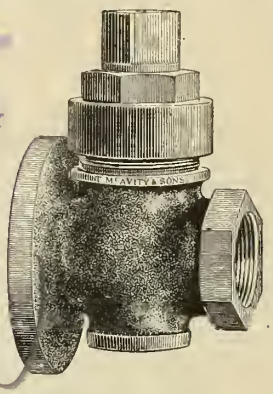
Marine Cocks

Brass or Iron

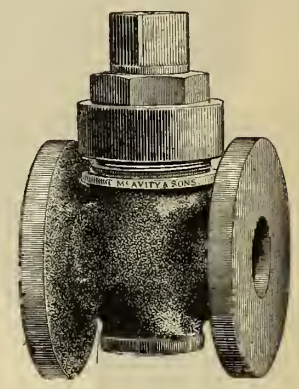
SCREWED



FLANGED and SCREWED



FLANGED



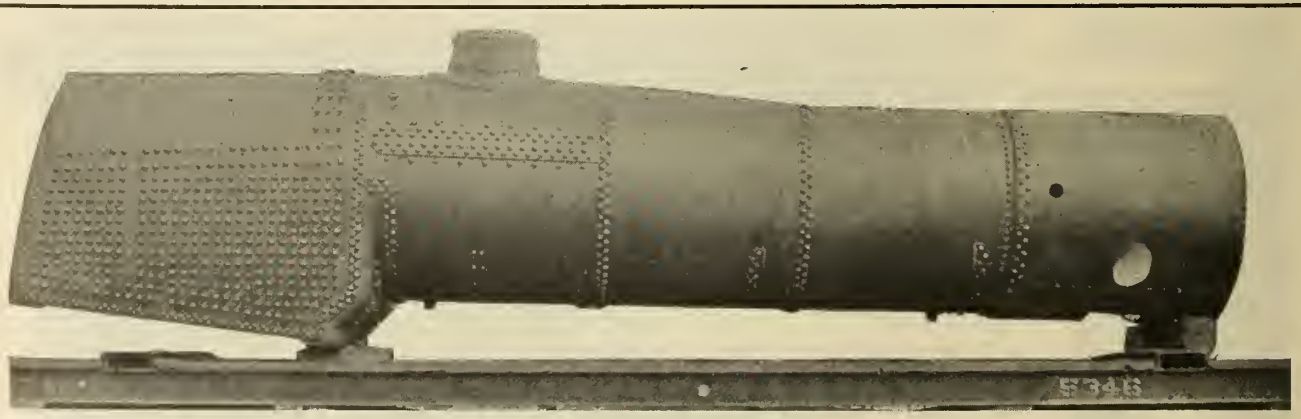
Manufactured and For Sale By

T. McAvity & Sons, Limited

Wholesale and Retail Hardware
Brass and Iron Founders

ST. JOHN, N.B., Canada

Montreal **Toronto** **Winnipeg**



THE ART OF STAYING—The locomotive fire box will advance in just that proportion as suitable and adequate means are provided to enable the fire box to expand under the least restriction.

STAYBOLTS BREAK—when the stress of fire box expansion is too severe, and fire sheets distort and crack when staybolts are too rigidly connected to same.

THE TATE FLEXIBLE STAYBOLT—is designed and made to give satisfactory results in the final measure of its usefulness, as an economic, safe and reliable factor in reducing the costs of fire box repairs and maintenance.

ANY ARTICLE THAT CONTRIBUTES—to the service value of the locomotive as an earning factor is well worth considering carefully. From the knowledge of what has been accomplished by the use of the Tate Flexible Staybolt, we feel confident that all our patrons are well aware of its true value.

FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.

RESULTS COUNT

That's Why 480 Railroad Shops Are Using Thermit

Thermit offers the only sure and reliable repair for locomotive frames and other heavy sections.

The superheated liquid Thermit steel is produced in bulk and poured all at once into a mold surrounding a broken section, resulting in the perfect amalgamation of the Thermit steel with the parts with which it comes in contact. The fact that those parts are first preheated, makes the weld doubly sure.

The operation of welding locomotive frames is easily accomplished, without removing the frame from position, and with very little dismantling, no matter if the frame be broken in the splice, jaw, next to the cylinder saddle, or at any other point. The engine is returned to service in from ten to twelve hours.

Hundreds of thousands of pounds of Thermit are being used annually by railroad companies in the United States and Canada.

There is only one reason for this, and that is that Thermit produces results and we all know that "results count."

Our pamphlet No. 2144 will be of interest.

All Thermit and Thermit appliances are made in our Canadian shops.

GOLDSCHMIDT THERMIT COMPANY

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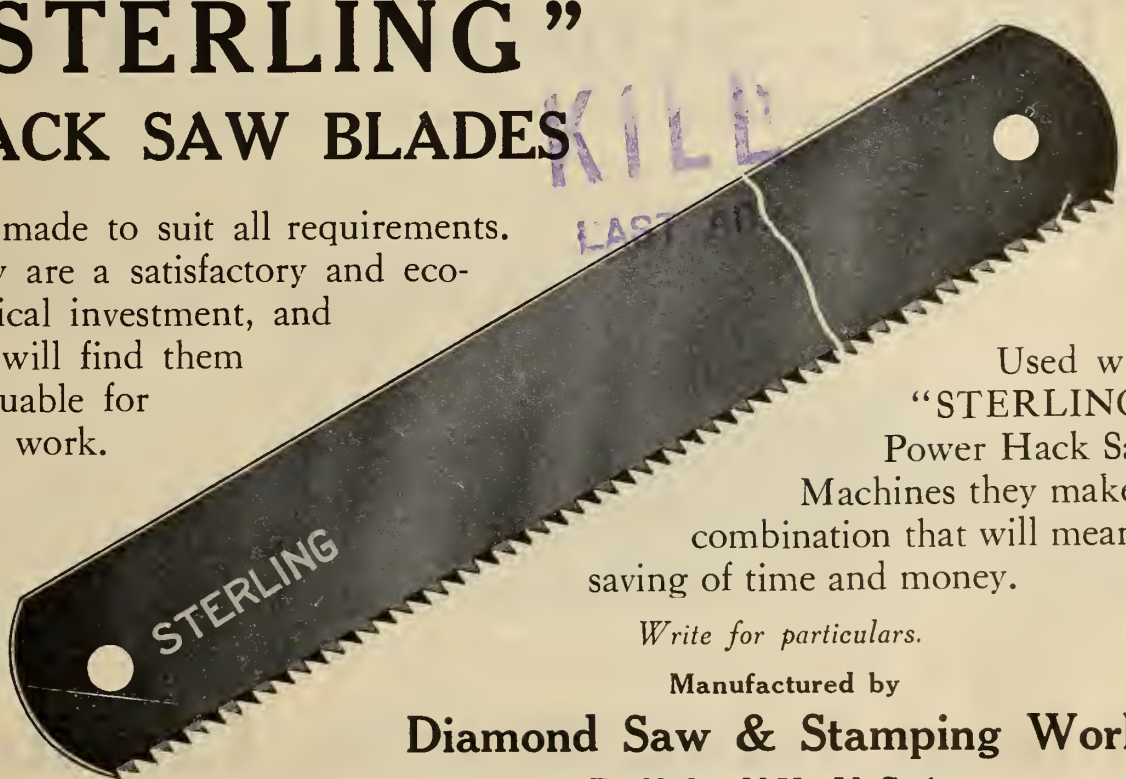

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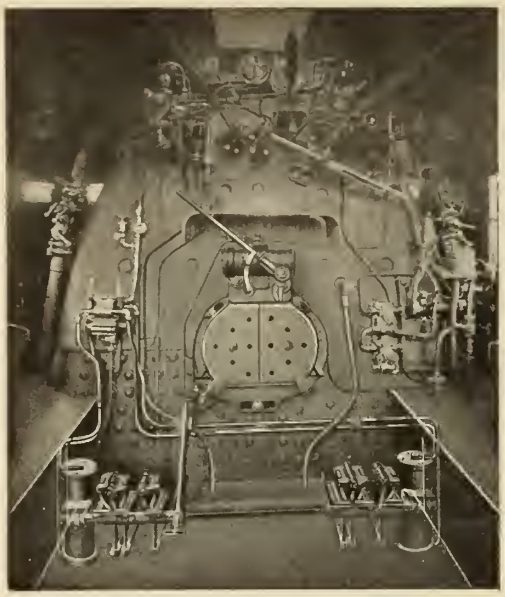

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One of the greatest military needs is good steamers.

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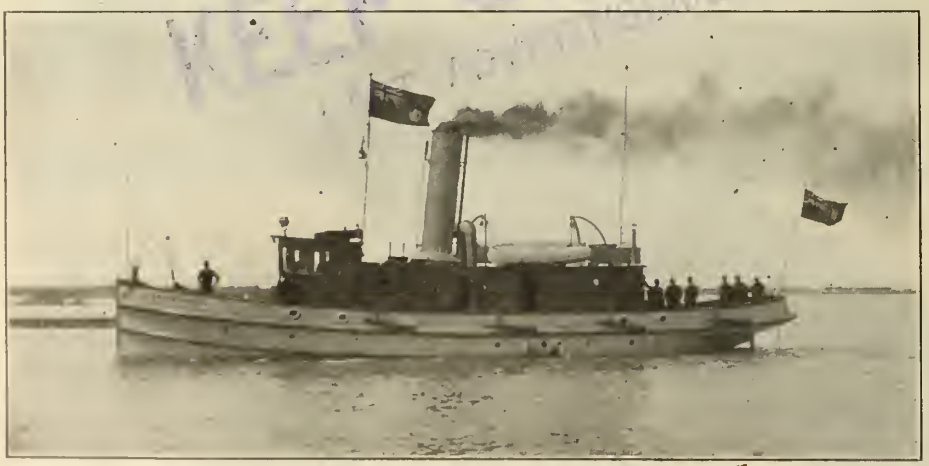

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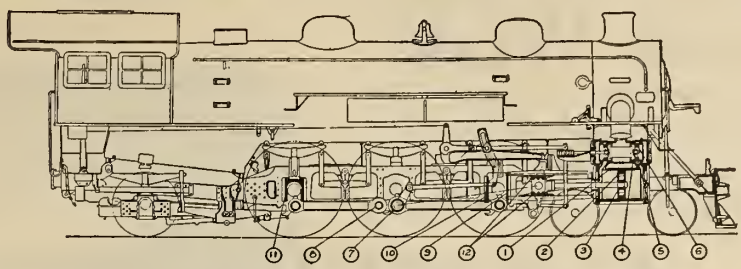

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is that which, whilst possessing the strongest possible bond, is at the same time, so formed as to be most conveniently and quickly handled for any form of concrete construction. This fact accounts for the great popularity of

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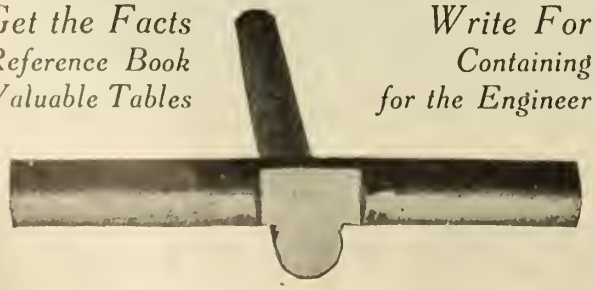

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Lagonda Cleaner Removing Scale from Arch Tubes.

Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of Locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

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Canadian Railway and Marine World

September, 1917.

The Ventilation of the Connaught Tunnel, Selkirk Mountains.

By J. G. Sullivan, M.Can.Soc.C.E., Chief Engineer, Western Lines, C.P.R.

When the Connaught tunnel was first planned, it was generally supposed that it would be necessary to operate by electricity, but upon further studies of the subject it was found that the large cost of installing a plant for this short section and the enormous extra expense of operation, would have entirely wiped out any economical saving made by the construction of the tunnel. Therefore, a study was at once commenced on other methods of operation. As a result of the study a plan was adopted of blowing air through the tunnel by the use of fans, similar to the method adopted by an Italian engineer, in the ventilation of the St. Gothard tunnel, a number of years ago. However, instead of putting up an obstruction at the portal of the tunnel, where the fans are situated, to prevent the air from coming out of that end, a nozzle patented by C. S. Churchill and the late C. C. Wentworth was adopted, plans of which are illustrated in figs 1, 2, and 3. With this system we can with perfect safety operate this tunnel with steam locoomtives.

The principle of the nozzle is as follows: Air is forced into a comparatively large chamber, which terminates in a nozzle inside the tunnel. If the pressure is great enough, there is sufficient energy in the air, leaving the nozzle at high velocities, to overcome the resistance of-

Connaught Tunnel, C.P.R., East Portal

fered by friction, variation in barometric pressure, or other resistance to the flow of air, that may occur in the tunnel. In general, where tunnels are comparatively short, the ventilating plant would be located at the lower end of the tunnel, and trains reduced to a speed lower than the velocity of air in the tunnel, so that the smoke and gases are blown ahead of the moving train. In a tunnel as long as the Connaught one, this method of operation with a fan system was entirely out of the question, but as the tunnel is of a large area, it was decided to establish the ventilating plant at the higher end of the tunnel, and blow fresh air against the approaching trains on the up grade, and thus dilute the gases coming from the locomotive. The dangerous gas generated by a locomotive is carbon monoxide, and it is usually generated in cases of an accident, where the draught to a heavy coal fire is shut off. The ordinary carbon dioxide, the usual resultant of complete combustion, is not so dangerous, and a much larger percentage of the latter gas is permissible. As our locomotives on this section use oil for fuel, in case of a sudden stop the fire can be shut off, and there is no danger of producing the deadly carbon monoxide.

Returning again to the plans of the ventilating system. The usual method is to put the fans at the side of the track, a little above the elevation of the base of rail. In this case, however, since the portal of the tunnel is in a very deep cut, it was decided to put the fans over the portal. Instead of running the fans by engines driven by steam, it was further decided to use Diesel engines. These will only consume 0.4 to 0.5 lb. of oil per horse power of work, while the best we could hope to get from a boiler would be one horse power for every 2 or 2.5 lb. oil, and possibly not as good results in this case, where the work is only intermittent, the fans being run only at intervals when a train is on the up grade

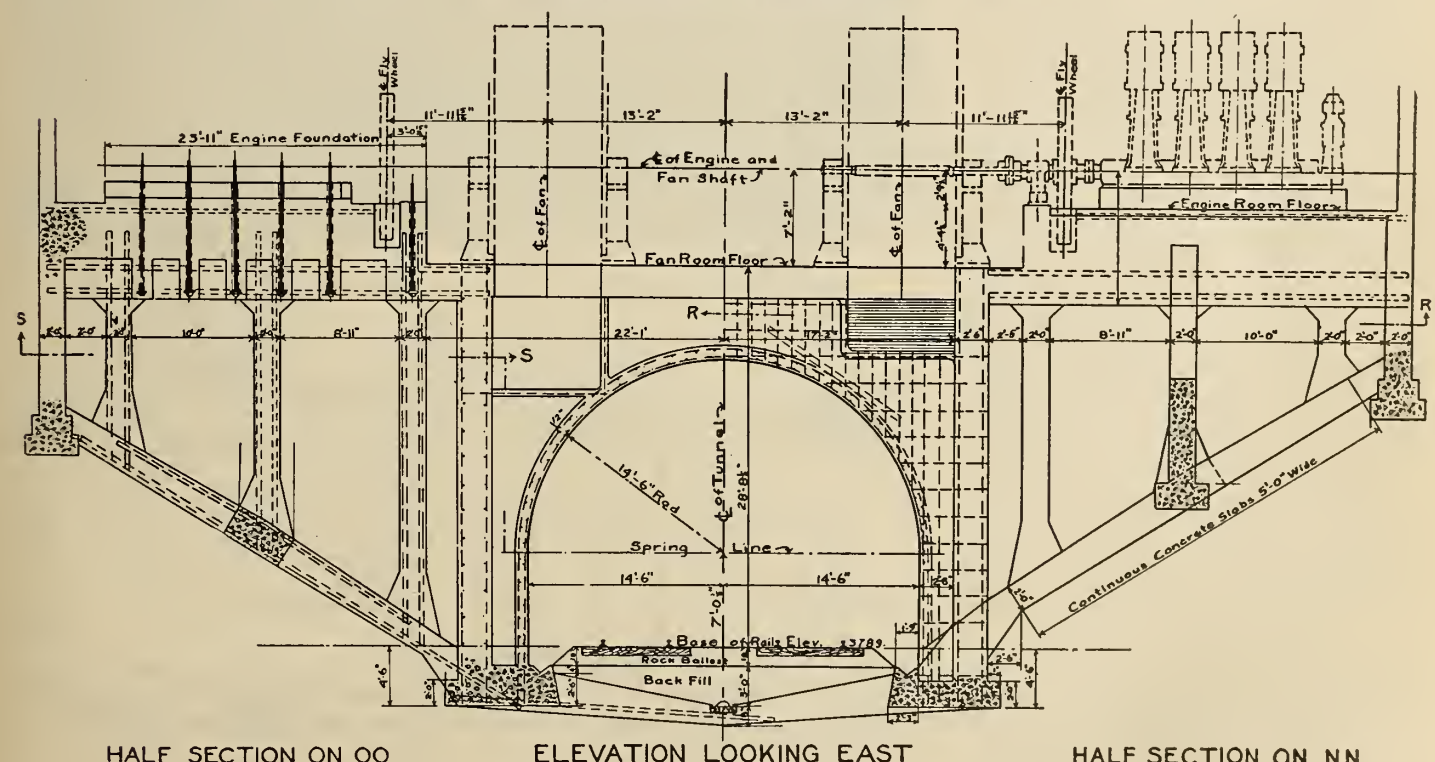


Fig 2.—Connaught Tunnel Ventilation.

through the tunnel, and for a sufficient length of time after the train passes to entirely clear the tunnel of gas.

In fig 1 is a small diagram, showing the location of the plant in reference to the spiral of a 4 degree curve at the entrance of the tunnel. The reason I show it here is to give a general outline of air space and nozzle, and I may state that this air space was greatly reduced from the original plans, on the suggestion of the engineers of the company supplying the fans; the idea being that there was nothing to be gained by changing from dynamic pressure, as the air left the fans, to a static pressure in a large chamber, and then again change to dynamic pressure in the air leaving the nozzle at a high velocity. All that was required was a chamber large enough to allow the air to spread out to the flat long nozzle on the circumference of the tunnel. The fan house between the two engine rooms is being left entirely open, thereby offering as little resistance as possible to the flow of air from the outside to the fans.

Fig. 1 is a general plan, and on the right hand side shows a deflector, keeping the air from each fan separated to a point within 7 or 8 ft. of the opening of the nozzle. The reason for introducing this feature is, that Diesel engines run at a constant speed, and will carry practically no great overload. When it is necessary to shut down one engine, and run only one fan, if the air was allowed to spread over the entire nozzle, the resistance would be reduced, the fan would throw somewhat more air, and paradoxical as this may seem, would require more horse power to drive the fan, which would necessitate installing dampers, to choke the output of the fan, and also to entirely shut off the opening of the idle second fan to prevent the air coming back through it. The Diesel engines are of Swedish pattern, manufactured at Auburn, N.Y. Each engine consists of 4 cylinders, 4 cycle type, and is of 500 rated horse power at sea level. The elevations and sections, with the arrangements of engines are shown in fig 2.

A change was made in the original plans, by building the inside arch, from the portal proper, as far back as the engine house extended, of concrete, and in this way eliminating entirely a great number of rods that were in the air chamber holding the wooden arch in place. Another innovation was the use of rails as arch ribs for the nozzle lining. This only required one stay to be put through the air space for each rib, instead of having stays every 3 or 4 ft. which would offer obstruction of the free passage of the air. These features are shown in figs. 1, 2, and 3. The bottom of the nozzle is cut away, to enlarge the opening of the nozzle at grade line, which is a development of the opening of the nozzle, to keep the centre of gravity of the moving air approximately at the centre of the section of the tunnel.

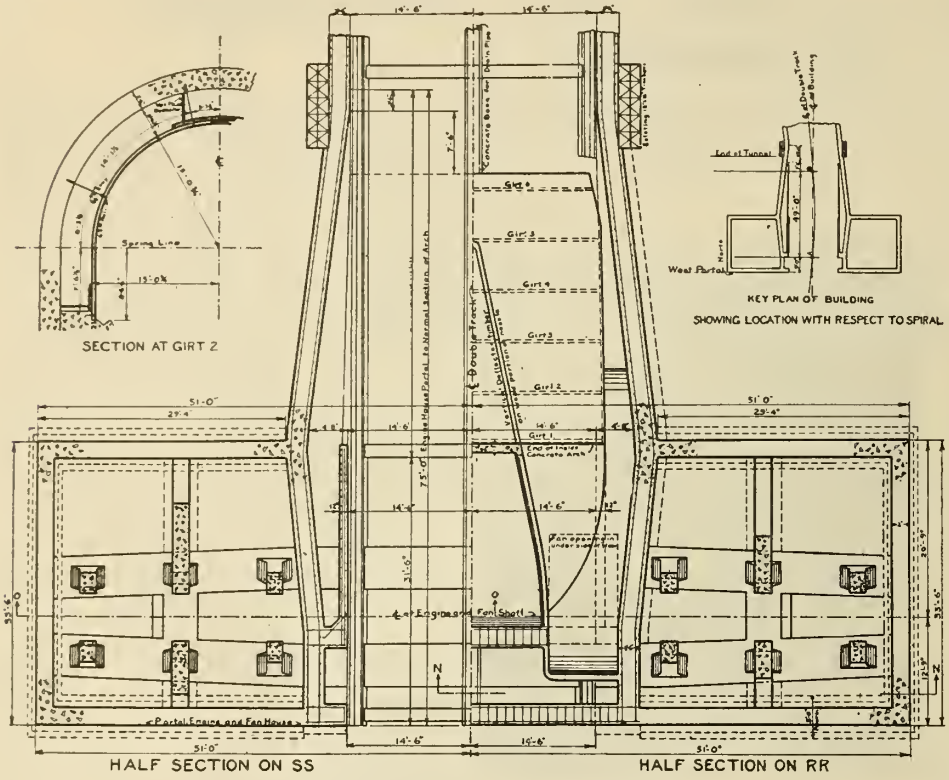


Fig. 1.—Connaught Tunnel Ventilation, Sectional Plan.

The tunnel was opened for operation Dec. 9, 1916, and no annoyance or trouble of any kind from gases or smoke has been experienced in it. The work was laid out and commenced under F. F. Busteed, M.Can.Soc.C.E., Engineer in Charge of Double Tracking. It was subsequently under the supervision of W. A. James, M.Can.Soc.C.E., Engineer of Construction, Western Lines, with H. G. Barber, as Assistant Engineer, T. Martin, Resident Engineer at the west end and J. R. C. Macredie, M.Can.Soc.C.E., Resident Engineer at the east end. The contractors were Foley Bros., Welch & Stewart. The construction work was supervised for the contractors by A. C. Dennis.

Canadian Northern Pacific Railway Taxation Appeal Case.

The Imperial Privy Council gave judgment, Aug. 3, on the Canadian Northern Pacific Ry.'s appeal against the British Columbia Court of Appeal's decision as to the right of municipalities to tax railway owned lands not actually used for railway purposes. The case was taken direct from the Court of Appeal to the Privy Council. The case involved a rather important point, viz., whether a provincial government has the right to give away a second time something which it has already granted by charter to a corporate body. Under the powers vested in it by the British North America Act, the British Columbia Legislature had granted municipal charters, which confer the right to tax all lands within their bounds, with certain specific exemptions, which exemptions do not cover railway lands. The company has title to certain lands in New Westminster City and Burnaby Tp., which it claims are exempt from assessment for taxes under its agreement with the government, which agreement was confirmed by the legislature. The final court of the Empire has now affirmed the provincial court's decision by dismissing the company's appeal. Other municipalities are said to be interested in the decision, although they were not parties to the action. New Westminster is said to be interested to the extent of $150,000; Burnaby Tp. to the extent of about $20,000, and Kelowna to about the same extent.

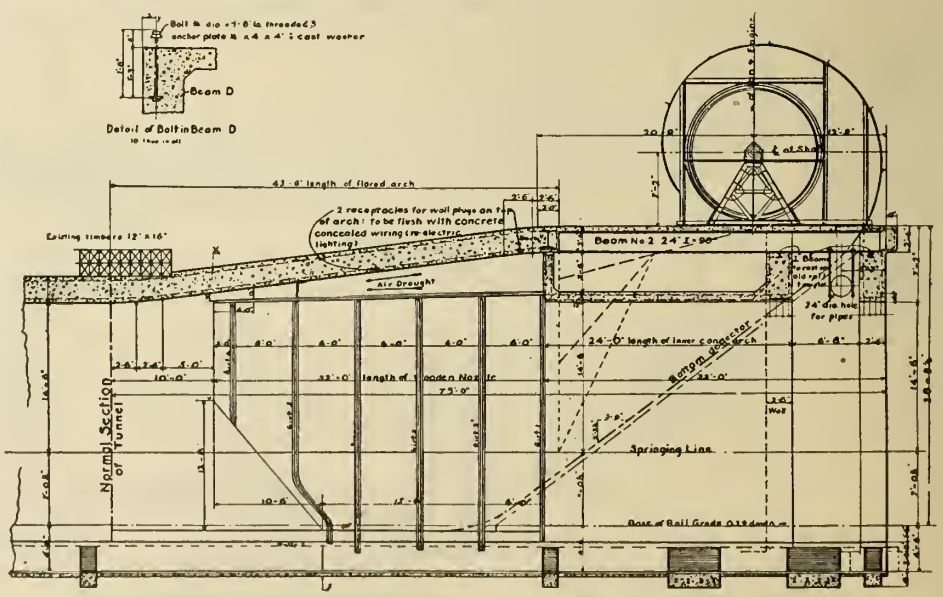


Fig. 3.—Connaught Tunnel Ventilation, Longitudinal Section.

Birthdays of Transportation Men in September.

Many happy returns of the day to:—

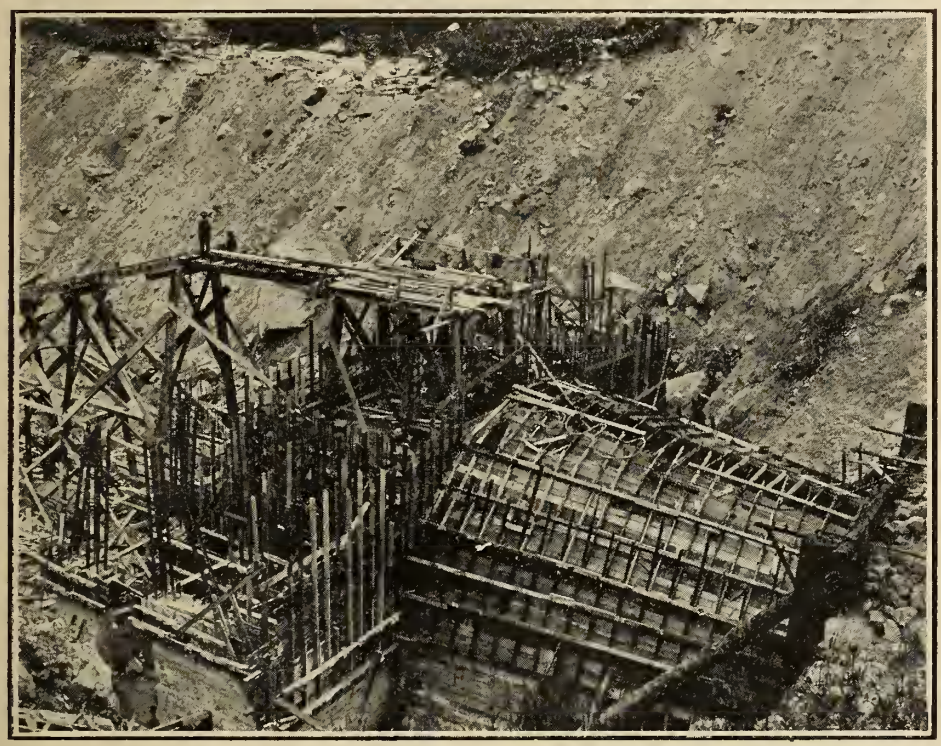
G. W. Alexander, ex Local Treasurer, G.T.R. Western Lines, Detroit, Mich., born at Lightcliff, Yorks., Eng., Sept. 10, 1859.

H. Bailey, ex Bridge and Building Master, Canadian Government Railways, Parent, Que., now of Huntsville, Ont., born there, Sept. 2, 1879.

W. B. Bamford, District Freight Agent, C.P.R., Toronto, born at Belleville, Ont., Sept. 10, 1863.

G. T. Bell, Passenger Traffic Manager, G.T.R., Montreal, born there, Sept. 7, 1861.

W. H. Biggar, K.C., Vice President and General Counsel, G.T.R., and G.T.P.R., Montreal, born at The Carrying Place, near Trenton, Ont., Sept. 19, 1852.



Connaught Tunnel, C.P.R., side view of forms for construction of portal and ventilator nozzle.

E. J. Blais, Foreman Tinsmith, Canadian Government Railways, Transcona, Man., born Sept. 26, 1876.

E. R. Bremmer, ex-Division Freight Agent, Ottawa Division, G.T.R., Ottawa, born at Toronto, Sept. 9, 1875.

M. H. Brown District Freight Agent, Ontario District, C.P.R., Toronto, born at Victoria Square, Ont., Sept. 2, 1866.

W. B. Bulling, ex-Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, born there, Sept. 16, 1858.

W. E. Burke, Assistant Manager and Director, Canada Steamship Lines, Ltd., Toronto, born at Belleville, Ont., Sept. 23, 1881.

A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, born at Kingston, Ont., Sept. 30, 1864.

A. S. Dawson, M.Can.Soc.C.E., Chief Engineer, Department of Natural Resources, C.P.R., Calgary, Alta., born at Pictou, N.S., Sept. 6, 1871.

E. W. Delano, Division Engineer, Lake Superior District, Canadian Northern Ry., Capreol, Ont., born at Abbot, Me., Sept. 16, 1880.

W. E. Duperow, Assistant General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, born at Stratford, Ont., Sept. 4, 1872.

J. P. Ferguson, representing Galena Signal Oil Co., Ottawa, Ont., born at Drummondville, Que., Sept. 12, 1856.

C. B. Foster, Assistant Passenger Traffic Manager, Eastern Lines, C.P.R., Montreal, born at Kingston, N.B., Sept. 30, 1871.

G. J. Fox, Superintendent, Schreiber Division, Algoma District, C.P.R., Schreiber, Ont., born at Montreal, Sept. 24, 1883.

R. S. Gosset, Auditor of Disbursements, Canadian Northern Ry., Toronto, born there, Sept. 28, 1879.

E. Goulet, Agent, C.P.R., New Westminster, B.C., born at Quebec, Que., Sept., 1865.

John Gray, General Agent, G.T.R., Toronto, born at River Beaudette, Que., Sept. 28, 1863.

D. W. Hatch, Travelling Agent, Atchison, Topeka & Santa Fe Ry., Montreal, born at Bedford, Que., Sept. 1, 1841.

W. B. Howard, District Passenger Agent, C.P.R., Toronto, born at Chatham, N.B., Sept. 15, 1877.

W. R. Howard, Chief Dispatcher and Trainmaster, Brownville Division, New Brunswick District, C.P.R., Brownville Jct., Me., born at St. Andrews, N.B., Sept. 14, 1871.

E. Humphreys, Storekeeper, C.P.R., Winnipeg, born at Hull, Eng., Sept. 24, 1869.

J. E. Hutcheson, General Manager, Montreal Tramways Co., Montreal, born at Brockville, Ont., Sept. 15, 1858.

C. B. King Manager, London St. Ry., London, Ont., born at Galena, Ind., Sept. 12, 1871.

S. King, Director, National Steel Car Co., Hamilton, Ont., born at Thetford, Norfolk, Eng., Sept. 12, 1853.

R. E. Larmour, General Agent, Freight Department, C.P.R., New York, born at Brantford, Ont., Sept. 26, 1868.

G. S. Lytle, Car Service Agent, Manitoba District, C.P.R., Winnipeg, born at Dennison, Ia., Sept. 23, 1878.

C. D. MacKintosh, Superintendent, Medicine Hat Division, Alberta District, C.P.R., Medicine Hat, born at Auckland, New Zealand, Sept. 24, 1882.

W. A. Mather, Assistant General Superintendent, British Columbia District, C.P.R., Vancouver, born at Oshawa, Ont., Sept., 1885.

J. F. Mundle, City Freight Agent, C.P.R., Montreal, born at Prescott, Ont., Sept. 20, 1857.

M. B. Murphy, Manager, Winnipeg Joint Terminals, Winnipeg, born at Napa, Cal., Sept. 11, 1866.

J. Paul, District Freight Agent, Canadian Northern Ry., Winnipeg, born in Euphrasia Tp., Ont., Sept. 13, 1858.

W. D. Robb, Superintendent of Motive Power, G.T.R., Montreal, born at Longueuil, Que., Sept. 21, 1857.

H. T. Ruhl, Engineer, Maintenance of Way and Structures, Delaware & Hudson Co., Albany, N.Y., born at Mifflinburg, Pa., Sept. 29, 1882.

A. Scott, Resident Engineer, Prince Edward Island Ry., Charlottetotwn, P.E.I., born at Kirkcaldy, Scotland, Sept. 6, 1884.

J. M. Silliman, Resident Engineer, London Division, Ontario District, C.P.R., London, Ont., born at Easton, Pa., Sept. 8, 1885.

H. A. Young, Ontario Storage & Cartage Co., Ltd., Toronto, born at Brooklyn, N.Y., Sept. 1, 1864.

When To Use Trestles in Making Rail Embankments.

When to use trestles in making railway embankments and when to raise the track as the fill progresses are questions not to be settled by any general rule, according to the roadway committee's report at the American Railway Engineering Association's last convention. Some engineers, the committee states, consider it almost always preferable to use a trestle, while others would raise the tracks up to 25 ft. or more.

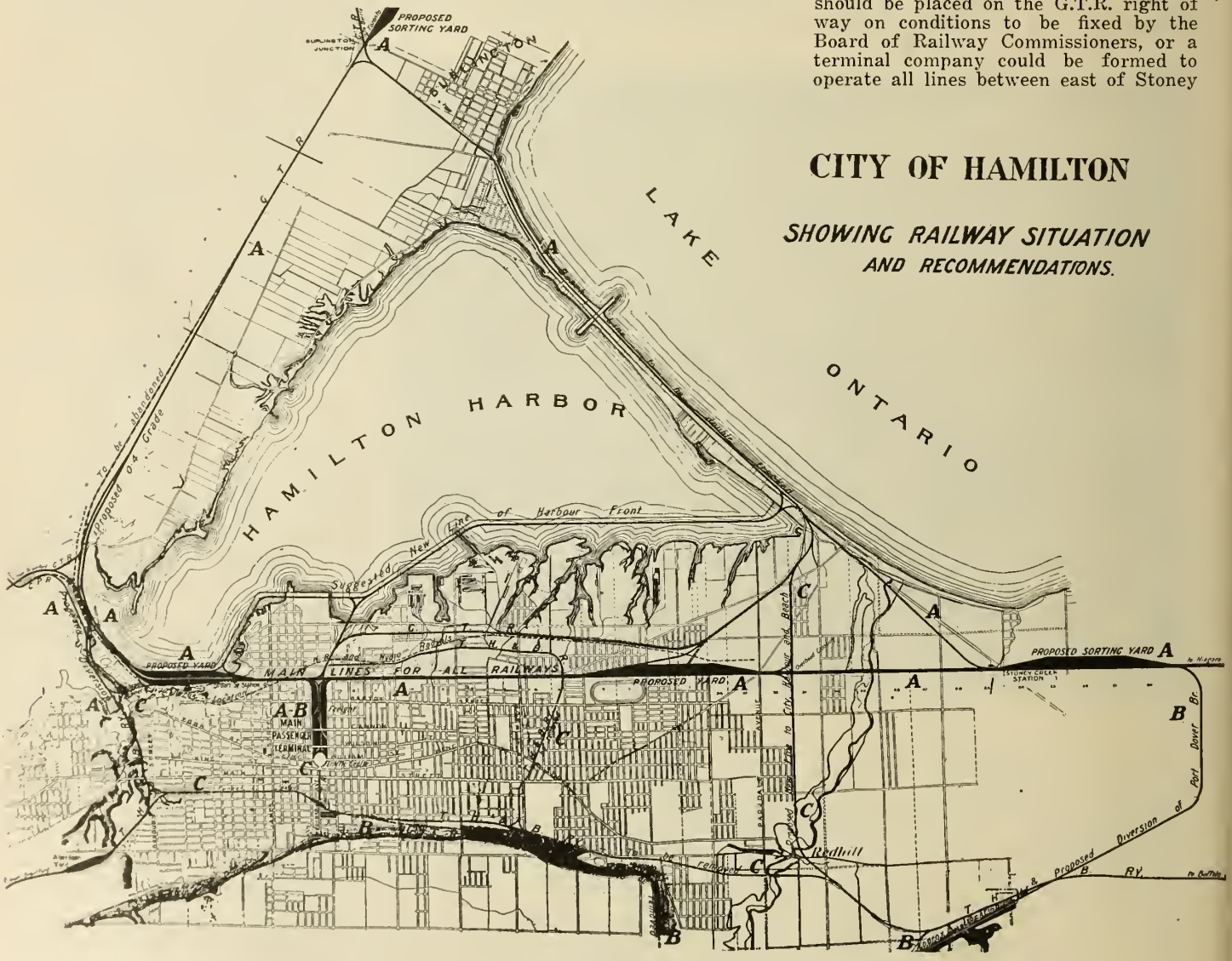
In treating each individual problem, the cost of raising the tracks, it is pointed out, should be carefully figured, including the delays and interference caused to and by traffic (if this exists), and this total should be set against the cost of trestling, including labor and materials. In some cases a run-around, to carry traffic clear of the work, can be made very cheaply, while in others this requires an auxiliary fill or trestle. In estimating for trestles that are not to carry regular traffic, the length of haul is important, because where this is less than two miles light side dump cars may be used and a very light trestle will suffice. Geographical location has an important influence, as climate, character and availability of materials, labor, lumber and other supplies vary enormously in different sections of the country.

Long service medals were presented to four Canadian Government Railways employes, Aug. 2. on their retirement on pension, as follows: George Moore, formerly foreman motion shop; John Gillespie, formerly foreman, erecting shop; William Steeves, formerly of the frog shop, and John H. Brown, formerly in the power house. Medals were also sent to Arthur Stockall, formerly in the blacksmith shop, and James C. Wortman, locomotive carpenter, who were too ill to attend. All the men were engaged at Moncton, N.B.

Engineers' Report on Railway Situation in Hamilton.

An important report bearing upon the railway situation at Hamilton, Ont., prepared at the instance of the city council by W. F. Tye, M.Can.Soc.C.E., consulting engineer, Montreal, and N. Cauchon, A.M.Can.Soc.C.E., consulting engineer, Ottawa, was made public recently. The railway situation in Hamilton has been a source of constant discussion for some years past between the city and the two companies at present owners of lines there, the G.T.R. and the Toronto, Hamilton & Buffalo Ry., the situation with the latter company in regard to the elimination of level crossings, either by depressing or elevating its line on Hunter St., having been before the Board of Railway Commissioners for the past two years. The Canadian Northern Ry. plans for a line through the city brought in some new factors, and the recently expressed desire on the part of certain municipalities, in conjunction with the Hydro Electric Power Commission of Ontario, to build a system of electric lines in the Hamilton district, using a parallel or the same route as the C.N.R., was a further complication. Some tentative plans for dealing with the problem as a whole, instead of continuing to negotiate with all the different companies concerned, were made during 1916, and as a result the city council engaged the two engineers named to look over the whole situation and make a report thereon.

After a lengthy introduction, in which the engineers review the present situation, they proceed to develop and discuss their suggestions under three heads as follows: Proposal A, referring to the entrance for new railways on a basis whereby the city would not be obliged to contribute in any way to their cost; proposal B, referring to the entrance of new lines and the elimination of the Ferguson Ave. cross town line, and proposal C. which is recommended for adoption; the entrance of new lines and the concentration on one main line right of way through the city of all lines existing and to be built.



Proposal A. — All through freight traffic on the G.T.R. and new parallel lines from the Niagara frontier to Toronto should go by way of Burlington Beach. New sorting yards should be immediately built east of Stoney Creek station and at Burlington Jct. All new lines entering the city from Toronto should be on a common right of way, which should parallel the G.T.R. right of way on the south and east side from west of Burlington Jct. to the Valley Inn, thence to Stuart St., with a 0.4% gradient compensated. A double track should be built and electrified so as to permit the use of both steam and electricity. If the G.T.R. desires to reduce its gradients the line should be constructed as a 4 track one, of which 2 should be electrified. If this were done the junction of the G.T.R. line to London would be made about half a mile nearer to Toronto than at present. The T.H. & B.R. connection with the new line would be made by depressing the present line about 22 ft. and drilling a short tunnel under the Hamilton-London line, while the C.P.R. line to Guelph Jct. would be diverted a little westerly. From the present Stuart St. station all the lines should be placed on the G.T.R. right of way on conditions to be fixed by the Board of Railway Commissioners, or a terminal company could be formed to operate all lines between east of Stoney Creek and west of Stuart St. station. There should be a 4 track line through the city, 2 tracks, with sidings, being electrified. A western yard for freight for new lines to be laid out north of the present Stuart St. yards; a new central yard to be laid out between Ottawa St. and Parkdale Ave., and small team delivery yards at various points. The new line should have access to all industrial spurs and sidings, and all switching to and from industries should be done by steam until the G.T.R. lines to the Niagara frontier are electrified. The gradients between Bay St. and Victoria Ave. should be reduced to a maximum of 0.4%. A

new union station should be built at the intersection of Cannon St. and Ferguson Ave. This would be a more convenient situation than would be one at James St., but would necessitate the putting of Barton St. in a subway. On this basis the city would not be called upon to contribute any of the cost, as the proposed route would give the new railways a better entrance at a lower cost than they can get on their one proposed route. The engineers recommend, however, that the present grade of the G.T.R. between Birch Ave. and Kenilworth Ave. be raised a maximum of 6 ft. at Gage Ave. to permit of future subways being easily drained. The city would probably be called upon to contribute part of this cost, as the principal advantage to be gained by such a change would accrue to it.

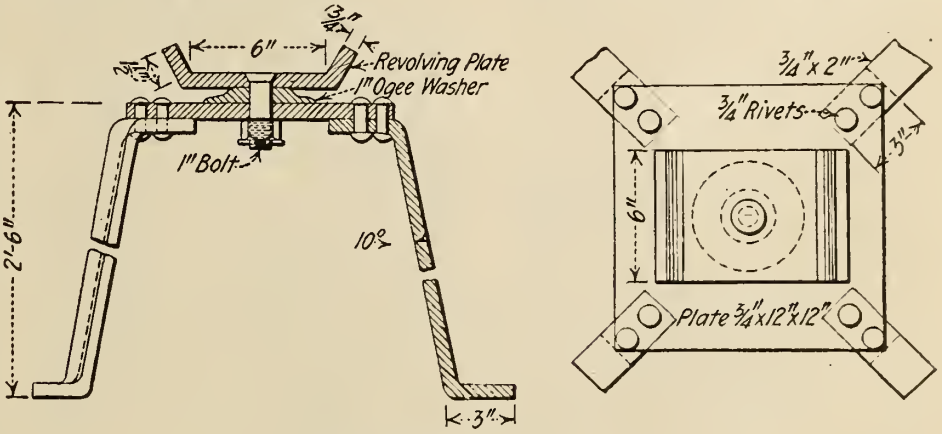
Proposal B. — All tracks, yards and spurs as they now exist to be removed from Ferguson Ave. The G.T.R. to build new lines from some point near Rymal station, on its Port Dover line, to a connection with the main line at Stoney Creek. A union station to be located at the intersection of Cannon St. and Ferguson Ave., to be built with a circular loop, so that trains may pass directly through without having to back in. A freight station to be built at Cannon St., having a connection with the main line, the tracks for both passenger and freight traffic to be depressed and Barton St. carried over them. Three plans are discussed, but the loop station is recommended as being the best, although it is estimated to cost $175,000 more than either of the others. The street railway and local radial railways should be brought to circulate around this traffic centre.

Proposal C.—The Toronto, Hamilton & Buffalo Ry. main line, yards and spurs from Red Hill Creek, between Stoney Creek and Bartonville, and the Y at Dundurn St., west of the Hunter St. tunnel, together with the greater part of the Gage Ave. cross town line, should be eliminated and replaced by a line from near Red Hill Creek to the G.T.R., near Parkdale Ave., and to the Burlington Beach line near the south end of the beach, and that company should join with the other companies in the formation of a terminal company to operate all main lines, yards and spurs between Stoney Creek yard on the east and Burlington Jct. yard on the west, including the Burlington Beach cut-off. The T.H. & B.R. should also build a tunnel under the park and cemetery to provide a connection between its Brantford line and the terminal tracks. All T.H. & B.R. through freight traffic to be sent round by Burlington Beach. A new union station to serve all lines entering or to enter Hamilton, to be built near King. William St., with a circular loop, so that trains might pass directly into it; all tracks to be depressed and streets carried over them. This would be the most expensive station plan, costing about $1,250,000 more than the cheapest (a through station on James St.), but the cost might be shared by all the railways and the city. In the event of proposal C being adopted in its entirety, the engineers recommend further that no industries requiring spur track accommodation should be permitted south of Barton St.; the erection of a sea wall along the harbor front, with the reclamation of the intervening low lying land for industrial purposes, and the laying out of switching tracks on the reclaimed area, connecting with the main line at the westerly end and with the Burlington Beach line at the easterly end.

In conclusion, the engineers strongly recommend proposal C as the ideal to which the city should work, and appends numerous reasons why it would be advantageous, not only to the city, but to the railway companies. The engineers, in a statement made July 13, asked for a very careful consideration of the report, suggesting there was plenty of time to do so, as, owing to present financial conditions ,any work of considerable magnitude was not likely to be taken in hand for a time. The statement concludes: The first of the works outlined in the report to be carried out should undoubtedly be the construction of the Stoney Creek yard and the improvement of the Burlington Beach line. . . . When the new roads are prepared to come in, Hamilton should insist that they follow the route outlined and should vigorously press for the carrying out of the various other works outlined.

The report, which was accompanied by plans, is being considered by the city's board of control.

The report was considered by the city's board of works and sent on to the city council with a recommendation that it be forwarded to the Board of Railway Commissioners as representing the city's views on the railway situation.



Small Turntable for Car Repair Yard.

New Union Station at St. Paul.

The plans for a new union terminal station in St. Paul, Minn., have been prepared, and the work of laying out the yards and erecting the station and other buildings will be started at an early date. The terminal project is being carried out by the St. Paul Union Depot Co., which represents the nine railways for which facilities will be provided. The site lies along the banks of the Mississippi River, upon the same frontage as formerly, the proposal to change the river channel having been abandoned, owing to the restrictions imposed by the U. S. War Department. The yard accommodation is to be widened by the purchase of all property out to Third St., while the passenger station will occupy a block along Third St., between Sibley and Waconta Sts., being connected with the tracks by a tunnel and a bridge. The tracks will be elevated through the terminals on a solid fill between concrete retaining walls, except where space is provided beneath the tracks for baggage, mail and express facilities. Jackson and Sibley Sts. will be carried under the tracks clear through to the waterfront, where there is a public levee for steamboat accommodation.

The track layout at the station provides for 22 passenger tracks and 2 freight tracks, while in addition there will be 2 outside freight tracks of the Chicago, Milwaukee & St. Paul Ry. Of the 22 passenger tracks, 8 will be for the use of trains for which St. Paul is the terminus, while the remaining 14 will be for through trains. There will be about 5 miles of trackage in the yards, making the total length of tracks in the terminal 12½ miles. There will be a large interlocking switch and signal tower at each end of the station. A 4 stall house for the switching locomotive will be provided. The several companies using the station will maintain their car cleaning, storage yards and locomotive facilities upon their own independent properties.

The station building will be 150 x 300 ft., facing towards Fourth St., but set back nearly half way to Third St. The ticket office and other main public facilities will be on the level of the Fourth St. entrance, while the upper floor will contain offices, kitchen and rest room for women. Two lower, or basement floors, will provide for station facilities, immigrants' quarters, branch post office, etc. As the main floor, entered from Fourth St., will be 26 ft. higher than Third St., this will permit the latter to be spanned by a bridge carrying the smoking room and a connection with the main waiting room. This room, with the concourse, will form a separate structure, 80 x 400 ft., extending across the tracks, with an elevator and stairway at each platform.

The estimated cost of the work is $11,000,000. The plans for the new terminal were laid out by W. C. Armstrong, Chief Engineer, and the Architect for the station building is by C. S. Frost.

Small Turntable Cuts Cost of Handling Relay Rails.

The turntable shown in the accompanying sketch is proving a big labor and time saver in handling rails for the Pennsylvania Rd.'s new car repair yard, now under construction at Greenville, N.J. The 85 lb. rails used are second hand, and the ball of each is badly worn on one side. Since it is therefore necessary to place the unworn side on the inside of the track being laid, it happens that many of the rails have to be turned end for end before placing them. Previous to building the turntable it required considerable manoeuvering by a gang of at least six men to turn one rail. With the turntable, however, which is set up about 18 ft, from the track being laid, two men can turn a rail with ease. The device was made complete for $8.—J. S. Sawkins, in Engineering News Record.

Fuel Economy as Related to its Use in Steam Boilers and Locomotives.

By S. H. Pudney, Fuel Inspector, Eastern Lines, Canadian Pacific Railway.

The article under the above heading in Canadian Railway and Marine World for August ended by giving the results of tests made with hand fired furnaces, and the showing of combustible gases at the surface of the fuel bed. The author's figures represent the whole of the air, and gases, rising from the surface of the fuel bed, and the 32% means that amount of combustible material was going up with the products of combustion.

How many of the actual consumers of coal and by this I mean locomotive men and locomotive firemen, as well as the heads of the mechanical departments, ever consider the possible saving of 10% of coal, due to the more perfect combustion of it in our furnaces or fireboxes? I venture to say not one in a hundred. The idea of escaping gases and black smoke, and the possible loss of fuel due to these causes, is usually ridiculed by mechanical men. But there is no valid reason why a 10% saving should not be effected in our fuel, and this would mean more than $1,000,000 to some companies. Allowing good combustible gases to escape unburned to the atmosphere, is detrimental to the good of the community, and is a loss of fuel, which at such a time as this becomes virtually a crime.

The locomotive has become a machine of wonderful power and size, and it is nearly up to its state of perfection in hauling power. It has, in the last few years gone up in leaps and bounds until it will now pull a load four times that of its predecessor of 25 years ago. This has not come about by any haphazard method but through extensive studies and experiments in all parts of the world, the testing of the strength of steel, of valves, of lubricants, of metals for wearing parts, the superheater, the computing of engines, etc., have all been parts towards perfecting such a great machine as the modern locomotive. The greatest part that has been taken towards this perfection is that brought about by scientific mechanical engineering researches. How far would our locomotive have progressed if it had been left to the ordinary mechanical man, without the scientific assistance that has been given to it. This does not need any more remarks, as we each appreciate the fact that there would have been no modern locomotive.

With all that has been accomplished in the locomotive mechanically how far have we advanced with the burning of the fuel in it? I hardly like to say so, but we are today in practically the same age as we were when Stephenson left us, the same methods obtain today as then. Stephenson found that he could not get enough steam without increasing the draught on his fire, today if an engine does not steam we increase the draught by decreasing the exhaust pipe nozzle. This enables the engine to burn more fuel, and so we get the steam, and at the same time by decreasing the exhaust pipe we get much more back pressure on our cylinders, which increases the consumption of fuel per ton mile. So far, with the exception of the brick arch, and the costly Gains firebox, and a few freaks, such as chemical fuel economizers and steam jet devices nothing has been added to our locomotives to give a greater efficiency from the coal that is being burned.

There is no doubt that most of this is due to the total indifference of mechanical men as to the question of the waste due to escaping gases and smoke. Some will tell us, even today, that they do not place much stock in the claim of loss due to this. Of course this is due to their deficient knowledge of the science of fuel and combustion or they would never make such statements. The same people will then tell us how much may be saved by the brick arch, and will exploit the saving effected by the use of powdered fuel. The saving brought about by both of these is due to the better combustion of the fuel being used, and if there was not any loss before it would have been impossible to effect the saving which they mention.

It is therefore quite necessary to reconcile ourselves to the fact that we do lose a lot of fuel in this way, before we can ever hope to accomplish any saving. It is not long since the idea of the superheater on the locomotive was scoffed at by the ordinary mechanical man, and even up to the last decade there was a great diversity of opinion as regards its use. But the laws that govern its beneficial properties were found out and given to the world about 115 years ago by Gay Lussac and are known as Lussac's law governing the expansion of gases, steam being practically a gas. I remember that only a few years ago a master mechanic told me that no benefit was received from the superheating of steam except that it was dried and free from moisture.. When I asked him if no benefit was obtained, due to the increased heat units contained in the steam causing a greater expansion, he said "certainly not." I am only mentioning this to show that people have necessarily to change their opinions as facts are brought to light. Today I find the same doubtful ideas as to the loss and the possible saving of fuel due to better combustion, and a great deal of antagonism is brought to bear against suggestions as to a means whereby we might try and save fuel on these lines; all due to the lack of knowledge.

I have even had mechanical men tell me that the idea of anything like perfect combustion is all rubbish in locomotive practice, all they want is plenty of steam. One prominent man, a few years ago, told me when suggesting a system for imparting knowledge to the men, that we did not want science men firing our engines, but coal shovellers. But if that was so at that time no one will deny that at this time we want fuel savers, not coal shovellers. We have not yet in locomotive practice seriously attacked the combustion problem, in a systematic manner. Very few are able to do so, because of the long and tedious study that is needed before one becomes well enough versed in the science to impart it to others as well as to improve the conditions mechanically. Of one thing we are certain, and that is losses do occur. But to work out some idea for the saving one must be versed not only in the knowledge of fuel of different classes, but should also understand the principal mannerisms of each, the distinctive distillation, the formation of the chemical compounds, and the breaking up again of these, as the process of combustion goes on, with the formation of others, all of which are necessary to complete combustion. The prevailing idea is that coal is bought to burn, and that is an end to it, hence the heavy losses in every day practice.

However little some may think of losses, yet they will exploit the wonderful results obtained by the use of powdered fuel. If the promoters of this device had not made a study of the subject they would never have been able to show us these results. Though my own opinion is the same today as for years past, viz., that powdered fuel is not destined to become the lomomotive fuel of future use. Such enormous sums would have to be spent in the construction of plants, from one end of the system to the other, and then the cost of upkeep of our tenders, etc., would make it prohibitive, especially when the day is rapidly approaching that other mechanical means will be adopted, in which we will both increase the efficiency and at the same time do away with the dense smoke as seen today.

It is only necessary that we confine ourselves to the simple rules that govern combustion to get results. Any class of fuel of a certain given b.t.u. value will evaporate a given quantity of water. It does not matter if this fuel is powdered, or in commercial sizes, it is all the same. But what is different is the way we use it. If we use the commercial sizes in a haphazard manner we cannot expect to get results. The difference is not in the fuel, but in the supporter of combustion, and how it is administered to the fuel. The powdered fuel device is worked out on the principle of giving a sufficient supply of air intimately mixed with the fuel. Hence the results shown.

All great authorities on fuel matters are agreed on what is needed for the perfect combustion of fuel, 1st, That there must be plenty of air. 2nd, That this air must be well mixed with the fuel. 3rd, That the temperature must be kept high enough for their combustion. The first two are the most important for us to consider and if they are properly carried out the last will be a certainty, and it has been the carrying out of this principle that has made the powdered fuel show up in such a way. There is nothing new in this principle, the action and combustion of explosives is carried out in a theoretical manner, by actual weight and measurements, and it is on this principle alone that combustion of the explosive material is so rapid that it immediately turns the solid material to a gas of many thousands of times more volume than its original size. If this matter had not been taken care of any more than our every day use of fuel, a gun would fire about two rounds and then would become choked with unconsumed combustible matter, which would destroy its usefulness. Therefore, if one difficulty can be overcome why not the other; which we will have to admit is so much more simple to accomplish?

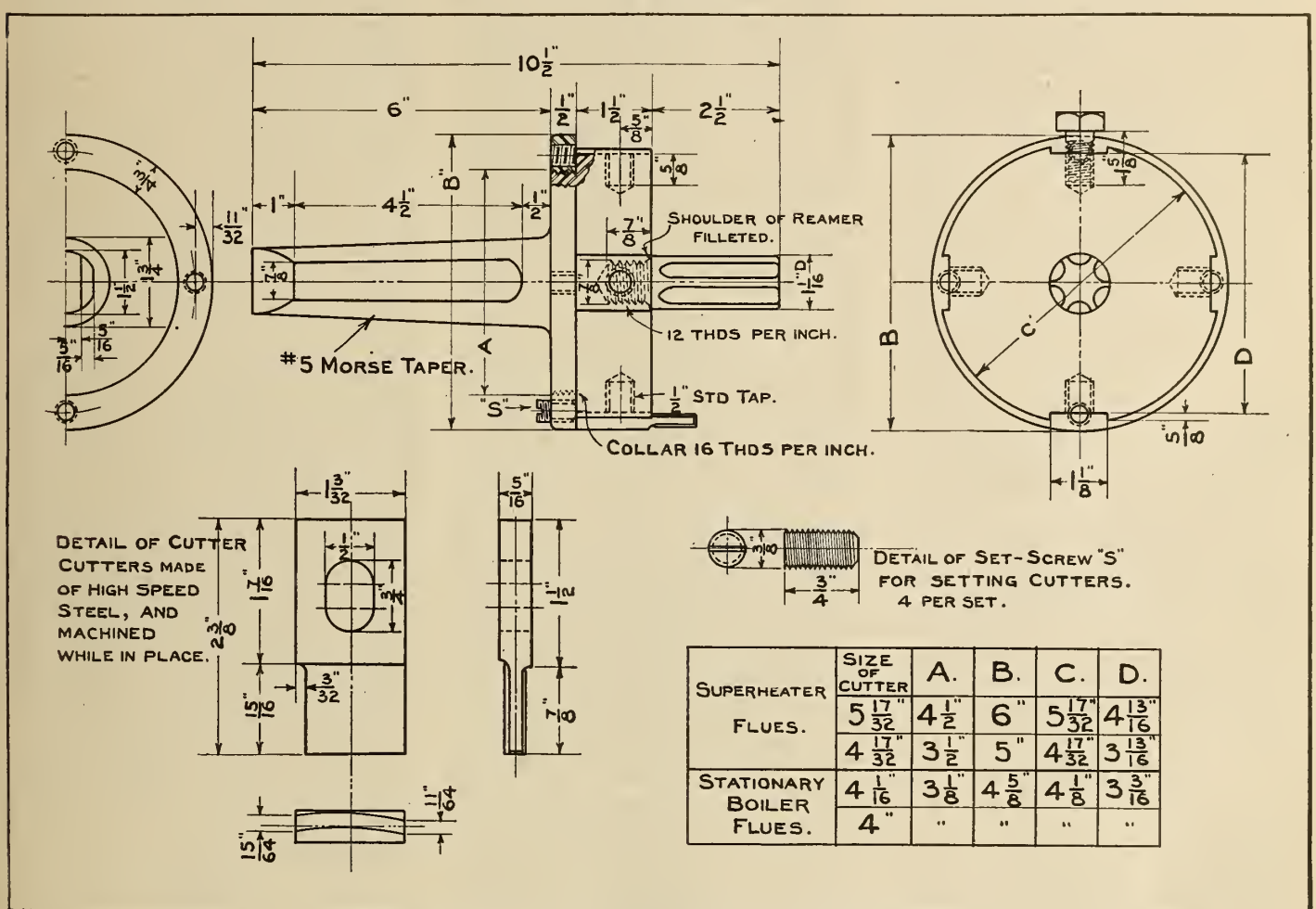
There is one reason and only one why the chemical fuel economisers and steam jet devices did not save fuel, because they operated in direct opposition to the laws that govern combustion, yet thousands of dollars have been spent throughout the country on these useless articles, without making a move towards the essential points that govern perfect combustion of fuel. A test made by the Pennsylvania Rd. with the brick arch, as against one which showed a saving due to the better facilities for the mixing of the gases and air showed a saving of 15% on fuel.

That the modern locomotive can burn its fuel much more economically than it at present does, recent tests show conclusively. I am confident that we can get a better arrangement for the supply of air to the fuel, than we have under existing conditions, and with far less effort on the part of our locomotives. That is to say, I believe and will endeavour in the next article to show how we can get these results, without decreasing the exhaust tip, which in turn means less back pressure on the cylinders, with a better working capacity of the locomotive.

person or persons operating the locomotive, to see a dark object, the size of a man, for a distance of 300 ft. or more ahead of the locomotive, under normal weather conditions. It is further ordered that these regulations be made applicable to all new locomotives acquired for road service, and to all road locomotives given a general overhauling subsequent to the date of this order, and that all road locomotives of the railway companies be equipped in conformity with the requirements of those regulations not later than Jan. 1, 1921. Every such railway com-

Cutter for Tube Sheets, Canadian Northern Railway.

The body of the cutter, a plan of which is given herewith, is made of mild steel and has four cutters screwed at right angles. The shank is turned down to a Morse standard taper and is used in a standard chuck on an air drill. Four slots are milled in the sides for cutters, which are of high speed steel and are screwed down, then the whole is put in a lathe and the cutters turned down on the lathe and


SHOULDER OF REAMER FILLETED.
12 THDS PER INCH.
#5 MORSE TAPER.
1" STD TAP.
COLLAR 16 THDS PER INCH.
DETAIL OF CUTTER
CUTTERS MADE OF HIGH SPEED STEEL, AND MACHINED WHILE IN PLACE.
DETAIL OF SET-SCREW "S" FOR SETTING CUTTERS. 4 PER SET.

	Size of Cutter	A.	B.	C.	D.
Superheater Flues.	5 17/32"	4 1/2"	6"	5 17/32"	4 13/16"
	4 17/32"	3 1/2"	5"	4 17/32"	3 13/16"
Stationary Boiler Flues.	4 1/16"	3 1/8"	4 5/8"	4 1/8"	3 3/16"
	4"	"	"	"	"

Cutter for tube sheets, Canadian Northern Railway Shops, Winnipeg.

Equipment of Locomotives with Electric Headlights Ordered.

The Board of Railway Commissioners passed general order 199, July 24, as follows: Re equipment of locomotives with electric headlights. Every railway is hereby required to equip its locomotives used in road service, between sunset and sunrise, with headlights which will enable persons with normal vision in the cab of a locomotive, under normal weather conditions, to see a dark object, the size of a man, for a distance of 1,000 ft. or more ahead of the locomotive; such headlight to be maintained in good condition. Every locomotive used in road service, which is regularly required to run backward for any portion of its trip, except to pick up a detached portion of its train, or in making terminal movements, to have on the rear a headlight which will meet the requirements of this order. Nothing in these regulations shall prevent the use of a device whereby the light may be diminished, in yards and at stations, to an extent that will enable a

pany failing to comply with the requirements of the provisions of these regulations will be liable to a penalty of $100 for each such failure.

Canadian Northern Ry. Accident.—A collision between a freight train and an excursion train from Alberta Beach, on the Canadian Northern Ry. near Edmonton, Alta., July 28, killed five persons and injured a considerable number of others. At the inquest, Aug. 1, the jury returned a verdict that the deaths were caused by a head on collision owing to employes of the company not strictly complying with the Board of Railway Commissioners' Standard rules which have so long been disregarded that it has become habitual for employes to so conduct themselves." S. J. Harrington, the train dispatcher, alleged to be responsible, was arrested on a charge of manslaughter, and released on $10,000 bail.

The Vancouver, B.C. Transportation Club held its annual picnic at Bowen Island, July 28, the party travelling from Vancouver by the Terminal Steam Navigation Co.'s s.s. Bowser.

ground slightly for clearance. The cutters can be slightly adjusted by slipping a filler between the cutter and the face of the tool. The cutters are set to follow one another and each engages at the same time, taking a successive cut and cutting more metal than the ordinary double cutter tool. With this cutter three sheets, or 22 holes, can be cut without regrinding the tool. We are indebted for the foregoing information and for the drawing from which the illustration was made to W. H. Hollingshead, Foreman, Tool Room, C.N.R. shops, Winnipeg.

The C.P.R. Recreation Club has opened a country club at Sortin Jct., Montreal, where it has secured 60 acres of land, with the right to use a further 40 acres, and has built a club house with 45 rooms. There are over 700 members, the officers being: President, G. H. Horn; Vice President, F. Taylor; Secretary, A. E. Collary; Treasurer, Miss M. O'Keefe; chairman of grounds committee, J. B. Blair.

Railway Facilities in Great Britain are to be further reduced on account of the military situation's exigencies.

Canadian Car Demurrage Rules.

The Board of Railway Commissioners passed general order 201, Aug. 1, its principal feature being a considerable increase in demurrage charges as shown in rule 9. The order is as follows:

The rules hereinafter set forth shall be known as the "Canadian Car Demurrage Rules," superseding the "Canadian Car Service Rules," prescribed by order 906 (General order 1), Jan. 25, 1906.

Rule 1.—Cars held for or by consignor or consignee for loading, unloading, forwarding directions, or for any other purpose. Exceptions: (a) Private cars (loaded or empty) on private tracks of the car owner. (b) Empty private cars stored on carriers' or private tracks. (c) Cars containing freight for transhipment to vessel, when moving on through bill of lading and held at railway terminal awaiting boat.

Rule 2.—Notification: (a) Notice shall be sent or given the consignee by the carriers' agent in writing, or as otherwise agreed to in writing by carrier and consignee, with all dispatch, after arrival of the car and billing; such notice to show the point of shipment, car initials and number and the contents, also the initials and number of the original car if transhipped in transit. If notice is mailed the consignee shall be held to have been notified at 7 a.m. following the date of mailing. The carrier shall notify the consignee or his carter on application where his car has been placed for unloading. Any time within the free time allowance lost to the consignee by default of the carrier in giving such information shall be added to the free time allowance. (b) Delivery of cars upon private sidings or industrial interchange tracks shall constitute notification thereof to the consignee. If such delivery cannot be made, owing to such tracks being fully occupied, or from any other cause beyond the control of the carrier, written notice of readiness so to deliver shall be given and shall constitute notification to the consignee for the purposes of these rules, in which case the free time shall be computed from 7 o'clock a.m. of the first following day. (c) In all cases where notice is required, by removing any part of the contents of the car the consignee shall be considered to have received such notice.

Rule 3.—Free time allowance: (a) Twenty-four hours (one day) after notice of arrival (exclusive of Sundays and legal holidays) shall be allowed for any or all of the following purposes, if necessary: (1) For clearing customs. (2) In the case of the consignees not served by private sidings or industrial interchange tracks, to give orders for special placement. (3) For reconsignment or reshipment in same car. (4) When cars are held in transit for inspection or grading, or are stopped in transit to complete leading to partly unload, or to partly unload and partly reload, when such privilege of stopping in transit is allowed in the tariffs of the carriers. (b) If the 24 hours allowed for the above mentioned prices allowed for the above mentioned purposes are exceeded demurrage shall be charged. (c) Forty-eight hours (two days) free time (exclusive of Sundays and legal holidays) shall be allowed for loading or unloading all commidities.

Exceptions: (1) In the portion of Canada, Port Arthur and west, in which the Canada Grain Act applies, 24 hours free time only shall be allowed for loading grain. (2) Five days free time shall be allowed at Montreal and at tide water ports for unloading lumber and hay for export. (3) Manufacturers, lumbermen, miners, contractors and others, who have their own motive power and handle cars for themselves or others, shall be granted an additional allowance of the time necessary for them to do the switching from and to the designated interchange tracks, but not to exceed 24 hours.

Rule 4.—Computing Time: (a) On cars held for loading, time shall be computed from the first 7 a.m. after placement, until loading is completed and proper billing instructions are furnished, except that on cars placed for loading grain at stations west of and including Port Arthur free time shall be computed under the provisions of "The Canada Grain Act." (b) On cars held for disposal (see Rule 3a), time shall be computed from the first 7 a.m. after the day on which notice of arrival is sent or given to the consignee. (c) On cars held for unloading, time shall be computed from the first 7 a.m. following placement on public delivery tracks, provided notice of arrival has been sent or given to the consignee. (d) On cars to be unloaded on private delivery tracks, time shall be computed from the first 7 a.m. after actual or constructive placement on such tracks. (e) On cars to be loaded or unloaded on tracks of manufacturers, lumbermen, miners, contractors or others, who have their own motive power and handle cars for themselves or others, time shall be computed from the first 7 a.m. following actual or constructive placement on the interchange tracks until returned thereto. Cars returned loaded shall not be recorded released until billing instructions and other necessary data are furnished. (f) When empty cars are placed for loading on orders and are not used, demurrage shall be charged from the first 7 a.m. after placement until released, without any free time allowance. (g) When an empty foreign car is placed for loading via a specific route, so as to protect the ownership of the car according to the Car Service Rules, and when loaded is consigned by any other route, demurrage shall be charged until the car is unloaded and released, without any free time allowance. (h) Time lost to the shipper or consignee through switching of cars, or through any other cause for which the railway company is responsible, shall be added to the free time allowance. (i) In computing free time or demurrage time, Sundays and holidays shall be excluded. The exemption for holidays shall not include half holidays.

Rule 5.—Weather interference: (a) If wet or inclement weather, according to local conditions, renders loading or unloading impracticable during business hours, or exposes the goods to damage, the free time allowance shall be extended so as to give the full free time of suitable weather. If, however, the cars are not loaded or unloaded within the first forty-eight hours of suitable weather no additional free time shall be allowed. (b) Should bulk freight be so frozen in transit, or before placement, as to render unloading impossible within the prescribed free time, such additional time shall be granted as may be necessary.

Rule 6.—Bunching: (1) Cars for loading. When, by reason of delay or irregularity of the carrier in filling orders, cars are bunched and placed for loading in accumulated numbers in excess of daily orders, the shippers shall be allowed such free time for loading as he would have been entitled to had the cars been placed for loading as ordered. (2) Cars for unloading or reconsigning: When, as the result of the act or neglect of any carrier, cars destined for one consignee, at one point, are bunched at originating point, in transit, or at destination, and are delivered by the line carrier in accumulated numbers in excess of daily shipments, the consignee shall be allowed such free time as he would have been entitled to had the cars been delivered in accordance with the daily rate of shipment. Claims for refund or demurrage under this rule to be presented to the carriers' agent within 15 days.

Rule 7.—Placement: (a) "Actual placement" is made when a car is placed in a reasonably accessible position for loading or unloading. (b) Delivery of cars to private sidings or industrial interchange tracks shall be considered to have been made when such cars have been placed thereon, or when they would have been so placed but for some condition for which the consignee is responsible. When cars cannot be so placed, the carrier shall notify the consignee in writing that he has been unable to deliver the cars because of the condition of the private siding or interchange tracks, or because of other conditions attributable to the consignee. This shall be considered "Constructive placement." Should the delivery require interswitching, the switching carrier shall notify the line carrier when for the aforesaid reason cars cannot be placed, and the latter shall furnish the former with particulars of cars ready for transfer (numbers and initials and points of shipment, contents and consignee, and if transhipped in transit the numbers and initials of the original cars). The switching carrier shall give this information to the consignee, with notification that the said cars are under constructive placement. (c) When delivery cannot be made on specially designated public delivery tracks on account of such tracks being fully occupied, or from any other cause beyond the control of the carrier, the carrier shall end or give the consignee notice in writing, or as otherwise agreed to by carrier and consignee, of its intention to make delivery at the nearest point available to the consignee, naming the point. Such delivery shall be made, unless the consignee shall before delivery indicate a preferred available point, in which case the preferred delivery shall be made.

Rule 8.—Customs or inspection delays. Demurrage shall not be collected from the consignee for any delays for which government or railway officials may be responsible.

Rule 9.—Demurrage charge. After the expiration of the free time allowed, the following charges shall be made until the car is released: For the 1st day, or fraction thereof, of delay, $1; for the 2nd day, or fraction thereof, of delay, $2; for the 3rd day, or fraction thereof, of delay, $3; for the 4th day, or fraction thereof, of delay, $4; for the 5th and each succeeding day, or fraction of a day, $5.

Rule 10.—Non-payment. If payment of demurrage charges properly due on cars held on public delivery tracks be refused, delivery of only the car or cars on which such charges are due shall be withheld by means of sealing or locking, or by placing where such cars shall not be accessible. If the owners or users of

private tracks, or the owners of industrial tracks referred to in rules 3 and 4, refuse to pay any charges which may already be due, delivery of cars to such sidings or tracks shall be suspended, and delivery shall be made on any available public team track until such charges have been paid.

This order becomes effective Aug. 20, 1917.

Railway Finance, Meetings, Etc.

Canadian Northern Manitoba Ry.—There was filed with the Secretary of State at Ottawa on Aug. 15 a duplicate original of a trust mortgage dated Jan. 2, 1916, made between the C. N. Manitoba Ry. and the Province of Manitoba—the Provincial Railway Commissioner and the Provincial Minister of Public Works being trustees—securing certain debenture stocks and bonds of the company.

Central Ry. of Canada.—Notice of the cancellation by resolution of the bondholders, of a mortgage deed of the company's undertaking, to the City Safe Deposit and Agency Co., London, Eng., dated Dec. 16, 1913, was filed with the Secretary of State at Ottawa, Aug. 10.

Diamond Coal Co.—An order has been granted by an Alberta court confirming the granting of an option for the sale of the company's assets to H. V. Hudson, Winnipeg, for $675,000 partly in cash and partly in bonds. The assets are heavily encumbered by an issue of bonds on which nearly $700,000 is owing, and miscellaneous mortgages and charges of about $175,000, so that on the reconstruction the secured creditors will not be paid in full and the shareholders and unsecured creditors will not receive anything. The Trust and Guarantee Co., Toronto, is permanent liquidator and trustee for the bandholders. The property sold includes a six mile railway from Kipp, on the C.P. R., to Diamond City, Alta., and several miles of sidings and colliery tracks.

Temiscouata Ry.—Earnings for May, $23,769; operating expenses, $20,225; net earnings, $3,544.

Coal Freight Rates, Intercolonial Railway.

Attention was called in the House of Commons, on Aug. 9, to the increased freight rate on coal from Sydney and other Cape Breton points to Levis and other places on the I. R. C. from $2.25 to $3.75 a net ton. The Minister of Railways said it was well known that the old coal rate was exceedingly low; it was put into effect when traffic on the line was largely to the east, enabling it to take back loaded cars. The situation has changed; practically all the loading is now west; and if very much coal business was done it would be necessary to take down empty cars for it. The rate mentioned is less than ½c a ton per mile, which is as low a rate as obtains in the United States. It is 1,000 miles from Sydney to Montreal and ½c a ton per mile would bring the rate up to a good deal more than the one in force. It is only in proportion that this rate has been increased to Quebec City and other places in Quebec Province. Having regard to the tremendous increase in wages and the increased amount being paid to coal producers for coal for the operation of the line the Minister considers the new rate amply justified.

Railway Rolling Stock Notes.

Canadian Government Railways have ordered 8 second hand baggage cars and 1 store car from Hotchkiss-Blue Co.

The Timiskaming and Northern Ontario Ry. has received 4 conductors' vans, the balance of an order of 6, from Preston Car and Coach Co.

The supplementary estimates laid before the House of Commons recently contain $25,000,000 for rolling stock for Canadian Government Railways.

Canadian Locomotive Co. has delivered 11 consolidation locomotives to the Imperial Munitions Board for the British Government, and one 0-4-0 saddle tank locomotive and one 10 wheel locomotive to Canadian Equipment Co.

The Russian Government is reported to be about to place a second order for 10,000 four wheel box cars of 1,200 poods capacity, out of 40,000 such cars authorized. A number of this type of car has been built in Canada, and it is said that the order for 10,000 is to be placed in Canada.

The National Steel Car Co. is reported to have received orders from the U.S. and French Governments for a large number of regulation army wagons and trucks mainly for immediate delivery. The U.S. order is said to also include freight cars.

Canadian Government Railways have on order with Canadian Car and Foundry Co., 5,000 steel frame box cars, 40 tons capacity, and 1,000 stock cars. Some of the box cars have been delivered, and it is hoped to complete the order early in 1918. Of these orders, 2,000 box cars and 1,000 stock cars are being built at the company's Fort William, Ont., shops.

The C.P.R., between July 11 and Aug. 20, received the following rolling stock: 1 compartment car, 1 steel mail car, 73 freight refrigerator cars and 1 decapod locomotive from its Angus shops, and 6 vans from its Winnipeg shops. There have also been purchased 10 air dump cars, 26 ft. long, and 44 converted vegetable cars, 600 coal cars converted from stone cars, and 775 coal cars converted from ballast cars, were received from Angus shops.

The U.S. Government has on order with American Locomotive Co. and Baldwin Locomotive Works, 1,064 locomotives of various types for service in France. It has also ordered at various plants 8,997 freight cars of different types for similar service. Of the locomotives, 680 are of standard gauge, and the balance of 60 c/m (23⅝ in.) gauge, and of the cars, 6,000 are of standard gauge and the balance of 60 c/m gauge.

Canadian Government Railways received the following additions to rolling stock between July 13 and Aug. 16: 15 box cars, 50 tons capacity, from Eastern Car Co.; 89 box cars, 30 tons capacity, from Canadian Car & Foundry Co.; 23 second hand Hart-Otis cars, from F. H. Hopkins & Co.; 10 second hand passenger cars; 4 second hand coal cars, 40 tons capacity; 10 coal cars, 35 tons capacity; 32 second hand coal cars, 30 tons capacity; 38 box cars, 30 tons capacity; and 2 second hand locomotives, from General Equipment Co., and 4 baggage cars, from Hotchkiss-Blue Co.

The C.P.R. has ordered the following rolling stock: 102 steel underframe box cars, 36 ft. long, 4 0tons capacity; 19 steel underframe flat cars, 41 ft. long, 40 tons capacity; 2 freight refrigerator cars, 41 ft. long, 30 tons capacity; and 4 coal cars, from its Angus shops, Montreal; and 4 vans, 1 snow plough and 2 flangers from its Winnipeg shops. Orders have been placed for the conversion of 336 single insulated refrigerator cars to vegetable cars, half of the work to be done at Angus shops and half at Winnipeg.

The French Commission, with the assistance of the United States Government, has, according to a report from Washington, placed contracts for 17,000 four-wheel low side gondola freight cars with U.S. builders for railways in France. The distribution has been made among five or six builders, including Standard Steel Car Co., Pressed Steel Car Co., American Car & Foundry Co., Haskell & Barker Car Company and one or two other builders. Cars will be of 12 metric tons capacity with flat bottoms. Each car will require from 5 to 7 tons of steel, or a total of 85,000 to 120,000 tons. The orders for the steel are being distributed among the mills through the Iron and Steel Institute. The contract price is estimated at between $20,000,000 and $25,000,000.

The G.T.R. was stated in our last issue to have ordered 1,000 box cars from American Car and Foundry Co. These will be G.T.R. standard steel framed, inside sheathed cars, with friction draft gear, special drawbar uncoupling device, improved roller side bearing, outside all steel carline roof, latest design of door hangers and fixtures, flexible dust guards, etc. Delivery of cars will commence in October or November. Following are the chief details:

Length inside between end sheathing ..... 36 ft.
Width inside between side sheathing 8 ft. 6½ ins.
Height top of floor to inside carlines at centre ... ... 8 ft. 3 13/16 ins.
Length inside between end sills .... 37 ft. 2½ ins.
Centre to centre of bolster ..... 26 ft. 10 ins.
Width over side sills ..... 9 ft. 9½ ins.
Width over al lat eaves ..... 9 ft. 0⅛ ins.
Height top of rail to roof at eaves 12 ft. 1 1516 i
Height top or fail to roof at eaves 12 ft. 1 15/16 ins.
Height top of rail to top of running board 13 ft. 1 in.
Height top of rail to top of brake mast 13 ft. 11 ins.

A press dispatch from Columbus, Ohio, states that the State Public Utilities Commission and the State Attorney General are investigating reports that the Toledo and Ohio Central Ry. and the Hocking Valley Ry. have sold coal cars to the Canadian Government Railways. It is said that John Kay, of New Brunswick, acting as agent for the Canadian Government, has admitted that he has purchased 1,700 coal cars from railways in Ohio. The Attorney General is reported to have stated that he is prepared to take drastic action to prevent another car from being sold for use in another state or country, and the discovery that the railways have been selling cars to another Government, while urging as a reason for increases in freight rates the need of additional rolling stock, is said to have caused much amazement. H. E. Speaks, General Superintendent, Toledo and Ohio Central Ry., Columbus, is reported to have stated that his company has sold 250 cars to the Canadian Government, and that they are undergoing repair at the company's shops at Logan. M. S. Connors, General Manager, Hocking Valley Ry., Columbus, is reported to have denied that his company has sold any cars recently, the last sale of cars having been made four years ago.

Great Northern Railway Terminals in Vancouver.

The accompanying illustrations show the passenger and freight stations which have been completed recently in Vancouver, B.C., by the Vancouver, Victoria and Eastern Ry., a subsidiary of the Great Northern Ry., and which are being used jointly by the company last mentioned and by the Northern Pacific Ry.

The Passenger Station, which is L shaped, the main front facing west, is about 375 ft. east of Main St. As the whole property is a fill, the building is supported on a pile foundation, cluster piles being driven and cut off below the line of perpetual saturation. Upon these, concrete piers were poured, which support reinforced concrete beams, which in turn carry the exterior walls, columns and floors. The skeleton of the building is reinforced concrete, hollow tile, and concrete floors and roof. The exterior has a granite base, carrying up and around all exterior doors terracotta surbase, and red brick above, with terracotta trimmings and cornice.

Union Passenger Station, Great Northern and Northern Pacific Railways, Vancouver, B.C.

The centre portion, 45 ft. high, and approximately 106 ft. long, contains the main waiting room, 60 x 100 ft., which runs the full height. Flanked on either side are two wings, about 56 x 65 ft., two stories high. The upper floors of the wings are appropriated to the Great Northern and Northern Pacific for offices.

The main waiting room is panelled in Alaska marble, 7 ft. high, and has marble and terrazzo floors and ornamental plaster ceiling. Provision was made in the plastering of the end walls for placing oil paintings showing the Glacier and Yellowstone National Parks. The lighting fixtures are of special design, and are executed in plaster. Alcoves off the main waiting room are fitted with seats and tables for the public. The ticket office is in the centre of the east wall, opposite the two main entrances. There are two principal entrances to the main waiting room from the west, directly opposite to which are two entrances leading to a glass covered concourse, running the full length of the building, which in turn leads to 11 tracks, the platforms being covered by umbrella roofs, 700 ft. long. Off the main waiting room in the south wing are located the smoking room, which has access to the concourse, women's retiring room and lavatories. In the south wing are an immigrants' room and lavatories, but having no connection with the main waiting room. A corridor, 12 ft. wide, runs down the centre of the north wing to a carriage entrance. Off the waiting room in the north wing are the parcels and news office and station master's, validating and information offices. Off the corridor leading to the carriage entrance are an exhibition room, a room for station officials and a checking lobby which is connected direct to the baggage room.

Freight Stations, G.N.R. and N.P.R., Vaucouver, B.C.

The leg of the L, or baggage room wing, is a one story building containing the baggage room, bonded baggage, Canadian and United States customs, trainmen's room, lavatory, mail room, Great Northern and Northern Express. The leg of the L is about 228 ft. long by 42 ft.

The ground in front of the passenger station is to be laid out in an attractive manner. The station will be reached by two driveways from Main St., and the remaining portion, not taken up by drives and walks, will be laid out with lawn and trees.

A hundred and fifty feet east of the baggage room wing, and in a direct line is the power house, 50 ft. x 42 ft., with a brick stack at the east end 90 ft. high. The power house supplies heat to the different buildings through an underground reinforced concrete tunnel, steam to the passenger cars at the stub tracks, and to the passenger car yards. In connection there is a transformer room and a motor driven air compressor. Provision is made in the boiler house for three 125-h.p. return tubublar boilers.

There are two freight sheds, the Great Northern one being next the passenger station and the Northern Pacific farther over. They are both 50 x 600 ft. set back 15 ft. from Park Lane, providing a small parking strip in front of the buildings. The Great Northern freight shed is separated from the passenger station at the narrowest point by a 60 ft. driveway. Between the two sheds there are 6 tracks, and on the north side of the Northern Pacific shed is a 60 ft. driveway, and then come the team tracks. The westerly 66 ft. of both sheds, adjoining Park Lane, are two stories high, containing the office portion, the remainder being simply a one story shed, cut in the middle by a fire wall, the easterly half for bonded goods and the westerly half for free goods. Customs accommodation is provided in both sheds. The foundations for the freight sheds are similar to the passenger station, above grade a granite base, brick with terra cotta trimmings, wooden floors.

Locomotive House.—At the east end of the yard there is a 15 stall locomotive house, with a machine shop and boiler house in connection. The depth of the locomotive house is 92 ft., and the machine shop and boiler house is 50 x 160 ft. The foundations are similar to the passenger station, with brick and wood construction above grade. In close proximity to the locomotive house are an oil house, 20 x 36 ft., and a store house, 30 x 73 ft., of similar construction to the machine shop, etc.

In connection with the passenger car

yards there are a commissary building, 100 x 40 ft.; an oil house, 20 x 20 ft.; car repairers' building, 30 x 20 ft.; car foreman's building, 20 x 12 ft.; car cleaners' building, 16 x 20 ft.; carpet cleaning building, 16 x 20 ft., and a coal house, 40 x 20 ft.

Under the direction of A. H. Hogeland, Chief Engineer, G.N.R., the buildings were designed by Fred L. Townley, architect, Vancouver, in whose office all the drawings were made and under whose supervision the buildings were erected.

In connection with the erection of the terminals the Vancouver, Victoria and Eastern Ry. has filled in the whole of the area from the southern boundary of the property, which is purchased from the city, to the shore line on the north side of False Creek. This area was previously part of the bed of False Creek. The average depth of the fill required to bring the property up to the approximate level of Main St. was about 12 ft. The company also owns considerable property on the south side of False Creek.

Main Waiting Room, G.N.R. and N.P.R. Union Station, Vancouver, B.C.

Stencilling Cars for Bulk Grain Shipments.

The Board of Railway Commissioners passed general order 205 Aug. 15, as follows: Re petition of Alberta Pacific Grain Co. and others, for an order requiring railway companies to stencil inches in box cars suitable for shipments of bulk grain. Upon hearing the matter at Calgary, June 18, the petitioners, the Alberta Farmers' Co-operative Association, and the Canadian Pacific, Canadian Northern, and Grand Trunk Pacific Railways being represented. It is ordered that railway companies be required to stencil inches, on the inside walls of cars used in the grain traffic in Manitoba, Saskatchewan, and Alberta, so as to show the depth of grain loaded therein, one stencil on each side of each door and 3 or 4 ft. therefrom; all such cars hereafter built to be so stencilled before going into service, and those now in service to be so stencilled from time to time when shopped for repairs.

Assessing Grand Trunk Pacific Railway Property in Calgary.

The Supreme Court of Canada has, in a recent judgment, upheld in several respects the contention of the City of Calgary, Alta, as to the assessment of the old Royal North West Mounted Police barracks in the city, acquired by the Grand Trunk Pacific Ry. for station purposes, and the company's other property in the city. The City Solicitor in reporting on the judgment to the Council said: "The company contended that the city's method of assessing in 1916 was illegal, claiming that the site comprising 25.3 acres should be assessed on a mileage basis of $1,000 a mile. The city did assess the registered right of way, comprising 3.64 acres, according to the Alberta statute, which says that the roadway and any superstructure thereon of any railway company shall be limited to an assessment of $1,000 a mile. The area actually comprised in the company's roadway from the eastern limits to the terminal site at the station is 4.8 acres, owing to the fact that the company did not build its station on the registered right of way which would have made it face Eighth Ave, consequently there is more land in the right of way. The Supreme Court rejected the company's contention that all of the terminal site should be assessed on a mileage basis, but allowed the company's appeal as to 4.8 acres comprising its actual roadway. All the rest of the acreage in question is to be assessed according to the method adopted by the city, viz., its actual value per acre. This means that the company's assessment for 1916 must be reduced by the difference between the assessment of 4.8 acres at $8,000 an acre and the assessment figured on a mileage basis. For each subsequent year it means that the company is entitled to have 4.8 acres assessed at the mileage basis instead of 3.64. The judgment is in effect a practical affirmation of the method of assessment contended for and adopted by the city."

Freight and Passenger Traffic Notes.

The Canadian Government Railways have opened a train enquiry office at Moncton, N.B., station.

The Lethbridge, Alta., Board of Trade is urging the C.P.R. to open a downtown ticket office there.

The Pacific Northwest Tourist Association, which is co-operating with the railway companies in promoting tourist travel in British Columbia, Oregon and Washington is said to have sent out $150,000 of advertising matter this year.

The trans-Pacific steamship lines operating to the far east, out of Victoria and Vancouver, have advanced the steerage rates by approximately 10% from Sept. 1. The C.P.R. rates on the Empress of Russia are advanced from $55 to $60 and on the Empress of Japan and Monteagle from $51 to $55.

The Grand Trunk Pacific Ry. announces in connection with the removal of rails in the Yellowhead Pass district that tickets must not be sold to Alpland, Burrows, Dyke, Galloway, Geikie, Miette, Hot Springs, Obed, Parkgate, Pedley, Rainbow, rant Brook, Hinton, Hurgwen, Lucerne, Medicine Lodge, Red Pass, Resplendent, Roundcroft, and Yellowhead. Track connection is, however, being maintained and a stub service is in operation between Henry House and Pocahontas, and tickets may be sold to Pocahontas, Hawes and Interlakes.

The Canadian Freight Association issued on Aug. 1 a new all-rail tariff from Montreal and all eastern territory to Fort William and points west, effective Sept. 1. The new tariff provides an increase in class rates per 100 lbs. as follows—Class 1, 6c; class 2, 3c; class 3, 3c; class 4, 3c; class 5, 2c. Nos. 4 and 5 of Canadian Freight Association's tariff cover respectively class and commodity rates. This is a similar advance to the allowed recently by the Board of Railway Commissioners in connection with raid and water rates.

Delaware and Hudson Co. trains which now run into the G.T.R. Bonaventure station, Montreal, will after Oct. 1 be operated into the C.P.R. Windsor St. station, and from same date Rutland Rd. trains now operating to Montreal over the C.P.R. will be operated over the G.T.R. The new arrangement of the Rutland service is as follows: The Montreal-New York route will be as follows: Montreal to Rouse's Point, N.Y., by G.T.R.; Rouse's Point to White Creek, N.Y., by Rutland Rd.; White Creek to Troy, N.Y., by Boston & Maine Rd.; Troy to New York, by New York Central Rd. The Montreal-Boston route is: Montreal to Rouse's Point, by G.T.R.; Rouse's Point to Bellows Falls, Vt., by Rutland Rd.; Bellows Falls to Boston, by Boston & Maine Rd. The Ottawa-New York route is: Ottawa to Rouse's Point, by G.T.R.; Rouse's Point to White Creek, by Rutland Rd.; White Creek to Troy, by Boston & Maine Rd.; Troy to New York, by New York Central Rd.

Martin N. Todd, President, Galt, Preston & Hespeler St. Ry., and General Manager, Lake Erie & Northern Ry., who had been in ill health for some months, died at his home at Galt, Ont., Aug. 29, aged 59.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Athabaska Northern Ry.—The Dominion Parliament has granted an extension of five years for the building of this projected railway from Edmonton to Athabaska Landing, Alta. The company was incorporated in 1905 to build a railway from Edmonton along the valley of the North Saskatchewan River to Tp. 59, Range 4 west of 5th Meridian, thence north easterly past Smoky Lake to Lac la Biche, and thence northerly to the Athabaska at the confluence with the Clearwater River. (Jan., pg. 18.)

British Columbia and White River Ry. The Dominion Parliament has extended for five years the time within which this projected railway may be built. The route authorized in the act of incorporation is from Bear Creek, where it is to cross the International Boundary between Alaska and British Columbia to the Chilkat River, thence northwesterly to the Alsete River, through the Shakwak valley to Lake Kluane, along the Donjek valley to the White River, thence to the International Boundary between the Yukon Territory and Alaska between the 62nd and the 64th parallels of latitude. The provisional directors named in the act of incorporation, passed 1911, are: C. M. Marpole, G. E. MacDonald, Angus McDonnell, Jas. Ironside, Vancouver, B.C., and J. Rosene, Seattle, Wash. (Mar., pg. 100.)

Calgary & Fernie Ry.—The Dominion Parliament has extended for five years the period within which the company may build its projected railway between Calgary, Alta., and Fernie, B.C. (Feb., pg. 50.)

Canadian Western Ry.—The Dominion Parliament has extended for five years the time within which the company may build its projected railway from the International Boundary through Pincher Creek and Cowley and along the Old Man River to Livingstone Mountain, and thence to Calgary, Alta., with a branch to Michel, B.C. This railway is projected by the same interests as are concerned in the Calgary and Fernie Ry. (Feb., pg. 50.)

Capilano Timber Co.—Rapid progress is reported to have been made with the logging railway being built by the company from the waterfront, immediately east of the Vancouver creosoting works, North Vancouver, along the west bank of the Capilano River to a short distance above the Vancouver waterworks intake. Grading is being gone on with from both ends and rails have been laid from the waterfront to the Capilano River, where a 200 ft. Howe truss span bridge is being erected. Grading was expected to be completed by Aug. 30, and the entire line completed and in operation by Oct. 1. (See Cedars Limited, July, pg. 273.)

Essex Terminal Ry.—The Dominion Parliament has authorized the company to build a branch line from its existing line near Ojibway to Pelton, Ont., seven miles. (May, pg. 193.)

Esquimalt & Nanaimo Ry.—A proposal with a view to settling the controversy with respect to the Johnson St. bridge, Victoria, has been submitted to the company and the Board of Railway Commissioners by the British Columbia Government. It is proposed to erect one-bridge capable of carrying all traffic, but the details have not been made public. The three plans which have been under discussion at different times for nearly three years are: (1) A joint highway and railway bridge, being the original scheme. (2) Two bascule bridges in close proximity (the railway company's plan shows a swing span); and (3) To adapt the present bridge for highway purposes and allow the railway to reach the Store St. yards by a more northerly route. (Aug. pg. 306.)

Grand Trunk Ry.—The Dominion Parliament has granted an extension of five years for building of the Lachine, Jacques Cartier, and Maisonneuve Ry. The projected route of the line is from the G.T.R. in Lachine parish, passing in the rear of Mount Royal to Hochelaga Ward, Montreal, or to Maisonneuve, with power to extend the line from the starting point to Dorval in one direction, and to the northern end of the Montreal Island in the other. This is a G.T.R. subsidiary, the company having been incorporated in 1909, and declared a work for the general advantage of Canada in 1911. The company has experienced considerable difficulty in securing its right of way, largely on account of the number of street crossings. It is reported that all difficulties have been cleared up, and that construction may be started next year. (Aug., pg. 306.)

Work is reported to have been started at Campbellford, Ont., on the Belleville-Peterborough line, on the preliminary work of raising the railway bridge over the Trent Valley Canal, which involves straightening the line as it approaches theh bridge, and building a new bridge a short distance from the present one. The new bridge will be of steel on concrete piers. It is expected to complete the work this year.

Grand Trunk Pacific Branch Lines.—The Dominion Parliament has extended for five years the time within which the following lines may be built: (1) The completion of the partially graded line from Harte into Brandon, Man., and on to Regina, Sask., with a branch from Brandon to the southern boundary of Manitoba at Turtle Mountain. (2) The extension of the existing Melville-Canora line to Fort Churchill on Hudson Bay. (3) The final completion of the Young-Prince Albert line, on which a train service has been placed in operation recently. (4) The completion of the Tofield-Calgary line from Calgary to the southern boundary of the Alberta at Coutts. (5) The completion of the Regina-Moose Jaw line—this covers the terminal work in Moose Jaw. (6) The extension of the line from Biggar, Sask., now terminating at Loverna, 105 miles, to a junction with the Tofield-Calgary line, or by an independent route into Calgary. (7) A line from the last mentioned line easterly and south easterly to Moose Jaw. (7) The extension of the line now in operation from Oban through Battleford, Sask., to Carruthers, 104 miles, to the main line between Arland and Wainwright, Sask. (Aug., pg. 306.)

Great Northern Ry.—A press report states that plans are being prepared for the construction of a three-car barge landing with trestle approach on Burrard Inlet, at an estimated cost of $20,000. Application has been made to the Vancouver Harbor Commissioners for permission to build. It is expected that tenders will be asked for at an early date. (Aug., pg. 306.)

Kenora and English Bay Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from the National Transcontinental Ry. in Kenora District, west of Superior Jct., northerly and westerly, crossing the English River west of Lac Seul, thence northerly and westerly in the District of Patricia, thence westerly and southerly to and in Manitoba to Winnipeg. The office of the company is to be in Toronto; the authorized capital is $1,000,000, and the company may issue securities for $50,000 a mile. The provisional directors are: W. Miller, A. LeR. Williams, E. Miller, C. Flatt, and A. A. Macdonald, Toronto. (June, pg. 224.)

Minden, Ont.—A press report states that the project to build a railway into Minden, Ont., has been revived; E. A. Rogers, clerk of the municipality, being interested. The G.T.R. has a line from Lindsay to Haliburton, the nearest point to Minden being at Gelert, about 9 miles off; while the Canadian Northern Ry.—the old Irondale, Bancroft and Ottawa Ry., connecting with the G.T.R. near Kinmount, is about 12 miles off. The country is a difficult one for railway construction.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—A press report states that a contract has been let for the erection of a 1,150,000 bush. grain elevator at North Minneapolis, Minn., and for a 2-story brick and reinforced concrete station at Stevens Point, Wis. (Mar., pg. 101.)

Pacific Great Eastern Ry.—A press report states that C.P.R. engineers have been inspecting this line, looking into its condition, and its possibilities for traffic. The report added that the C.P.R. might acquire the line. The Premier of British Columbia is reported to have stated that the C.P.R. had not made any approaches to the government on the matter. (July, pg. 273.)

The Pere Marquette Ry. is reported to have purchased six lots of the old Chain Co.'s property on Clifford St., Sarnia, Ont., upon which to erect a new station and that the present station near the Imperial Oil Co.'s plant, will be taken down. It is reported that building will be started at once and that the new station will be ready for occupation before the end of the year. (Jan., pg. 20.)

Prince Edward Island Ry.—The Minister of Railways said in the House of Commons recently that the Government had decided not to standardize the P.E.I. Ry. this year. It would take a considerable time to make the change of gauge. The rails would have to be shifted over, the bridges would have to be widened, the road would have to be straightened, and rolling stock would have to be widened or built new. It was, therefore, not desirable that the work be gone on with at present as the war is taking all the money the government has. The government had not decided as to the running of steamships between Pictou and Charlottetown, and between Summerside and Point du Chene for the balance of the year after the car ferry is put in operation. The government will endeavor to keep on all the steamships for which there may be business. (May, pg. 194.)

Red Deer Valley Ry.—An act passed at the Alberta Legislature's last session incorporating a company with this title authorizes the building of a railway from Princess, mileage 192, on the C.P.R. Swift Current-Empress-Bassano line, generally north westerly along the Red Deer River Valley to the Canadian Northern Ry. in Tp. 29, Range 20, west of 4th Meridian;

with branches not exceeding 20 miles each along Berry Creek Valley, Bull Pound Creek Valley, Willow Creek valley, Michichi Creek valley, and a branch along Mitjwin Creek valley to Gem, thence south westerly to Bassano. The capital stock authorized is $1,000,000, the office is to be at Medicine Hat, and the provisional directors are L. N. Laidlaw, C. S. Blanchard, J. W. Dempsey, H. O. Knowles, and C. F. H. Long, Medicine Hat. (July, pg. 274.)

St. John and Quebec Ry.—A press report states that the New Brunswick Government has cancelled the contract let in February to Nova Scotia Construction Co. for building the northern section of this line from Centreville to a connection with the C.P.R. at Andover, N.B.

The history of the letting of contracts on the line is being investigated by a commission, which has resulted in an admission by A. R. Gould, President of the company, that prior to its being taken over by the government, he had paid Hon. J. K. Fleming, the then Premier, $100,000 in connection with the negotiation of the contract; and that there were agreements for payments, or actual payments, made in connection with other construction contracts let. A. R. Gould and his associates have entered action to recover about $350,000 from the Government for the cancellation of the general contract, and the taking over of the undertaking. (July, pg. 274.)

Toronto, Hamilton and Buffalo Ry.—A press report states that work has been started on laying out for yard and terminal purposes the 50 acres acquired recently by the company at Bridgeburg, Ont. The work being done is probably of only a preparatory character, as we were advised recently that plans for laying out the area had not been settled. (Aug. pg. 306).

Western Dominion Ry.—The Dominion Parliament has extended for two years the time for constructing the main line from the International Boundary in Range 23, west 4th Meridian, northerly via Cardston and Pincher Creek to Lundbreck, on the C. P. R. Crowsnest line, thence to Calgary and Edmonton, Alta, and Fort St. John, B.C., with a branch from Pincher Creek via the south fork of the Old Man River to the Alberta-British Columbia boundary; and has extended for five years the building of a branch line along the north fork of the Old Man River to the Alberta-British Columbia boundary; a branch line along the Highwood River to the Alberta-British Columbia boundary, and another branch along the south branch of the Sheep River to the Alberta-British Columbia boundary. (April, 1915, pg. 137.)

C. P. R. Water Supply in Winnipeg.—The question of the renewal of the contract with the C.P.R. for the supply of water is under consideration by the Winnipeg City Council, and has been referred to a sub-committee of the light, heat, and power committee. Some years ago the C.P.R. promised to pay the city $200,000 in 10 or 20 yearly instalments for its water supply. The company now desires to be supplied with water from the Shoal Lake plant under construction for the Greater Winnipeg Water District. The constitution of this district provides that water cannot be supplied to any one not paying taxes except under a special agreement. The company contends that the payments made were the equivalent of taxes.

Canadian Pacific Railway Honor Roll 26.

Adams, Wintour Maurice	Watchman	Lundbreck	Killed in action
Anderson, John Henry	Trainman	British Columbia Dist.	Killed in action
Banks, Harold Francis	Supply car man	Moose Jaw	Killed in action
Beer, Samuel Albert	Yardman	Fort William	Killed in action
Binyon, Herbert W.	Assistant agent	Claresholm	Killed in action
Boardman, Sydney A.	Apprentice	Vancouver	Wounded
Bocking, Alfred I.	Bartender	Winnipeg	Wounded
Bryant, James John	Clerk	Angus	Wounded
Buckley, Edward	Car checker	West Toronto	Presumed dead
Bull, James	Carpenter	Regina	Wounded
Carpenter, Kenneth	Laborer	Fort William	Wounded
Carroll, John	Car inspector	Regina	Killed in action
Casson, Robert	Clerk	Calgary	Wounded
Clarke, Andrew Walker	Ashpitman	Lambton	Presumed dead
Collis, Christopher	Constable	Winnipeg	Wounded
Costain, Eden Quayle	Foreman	Vancouver	Wounded
Craig, David Robert	Ashpitman	Lambton	Killed in action
Craig, William	Clerk	Montreal	Wounded
Creamer, Gordon	Locomotive fireman	Winnipeg	Wounded
Cullen, William P.	Apprentice	Ogden	Wounded
Darlin, John Robert	Storekeeper	North Transcona	Wounded
Donaldson, David	Clerk	Calgary	Wounded
Dougall, Ralph	Engineer	Bankhead	Presumed dead
Douglas, George N. C.	Conductor	Moose Jaw	Killed in action
Etheridge, Charles	Oiler	B.C. Coast S.S. Service	Wounded
Fletcher, Walter	Elevator operator	Victoria	Wounded
Graham, John	Yardman	West Toronto	Wounded
Greenway, Frank Gale	Cashier	Saskatoon	Wounded
Hanbury, William G.	Apprentice	Vancouver	Wounded
Hay, Thomas Stuart	Conductor	British Columbia Dist.	Wounded
Headon, Andrew Robert	Clerk	Toronto	Wounded
Henderson, William J.	Storeman	Brandon	Wounded
Hutchings, Charles	Foreman	Cluny	Wounded
Johnson, William P.	Conductor	Alberta District	Wounded
Johnston, Robin Louis	Asst. Trainmaster	Sudbury	Wounded
Keay, George Ness	Locomotive fireman	Cranbrook	Presumed dead
Kerby, Joseph	Helper	Ogden	Killed in action
Kinnear, George W.	Elevator operator	Calgary	Presumed dead
Law, Neil	Fitter	MacLeod	Wounded
Leaming, John	Locomotive fireman	Minnedosa	Wounded
Lockyer, Henry R.	Cook	Winnipeg	Killed in action
Luxton, Thomas Fred	Car cleaner	Winnipeg	Died of wounds
McCurdy, Martin E.	Locomotive fireman	Sutherland	Killed in action
McGary, Withy Paul	Brakeman	Victoria	Presumed dead
McKay, Hugh	Yardman	Lethbridge	Wounded
McLennan, Arthur	Apprentice	Ogden	Killed in action
McLennan, John Donald	Conductor	Field	Killed in action
McLennan, William J.	Waiter	Montreal	Killed in action
McNally, John	Locomotive fireman	Sutherland	Wounded
Marcoux, Adrien	Clerk	Winnipeg	Wounded
Mathers, John	Tuber	Toronto	Wounded
Montgomery, James	Checker	Fort William	Wounded
Murray, Peter	Car repairer	Winnipeg	Presumed dead
Myers, Franklin P.	Clerk	Winnipeg	Wounded
Oatway, Henry	Clerk	Coquitlam	Killed in action
Paulson, Paul Teodore	Locomotive man	Lethbridge	Killed in action
Pickering, Arthur	Steward	Calgary	Wounded
Poulter, Stanley	Checker	Lethbridge	Wounded
Preston, Roy	Fitter	Calgary	Presumed dead
Proctor, John Paterson	Stenographer	Winnipeg	Wounded
Pryce, Alfred Walter	Car repairer	Broadview	Wounded
Purves, Thomas	Locomotive man	Outremont	Wounded
Richards, Alfred	Car repairer	Lambton	Died of wounds
Rix, John Browne	Carpenter	Regina	Killed in action
Rosevear, Frank M.	Yard Helper	West Toronto	Wounded
Sims, Albert Edward	Car checker	Portage la Prairie	Wounded and prisoner
Sincail, George Gunn	Clerk	Montreal	Wounded
Spence, David	Pumpman	Broadview	Killed in action
Stanistreet, William G.	Checker	Sortin	Died of wounds
Stark, David Lightbody	Conductor	Calgary	Killed in action
Sterlin, James E.	Conductor	Medicine Hat	Wounded
Sutherland, William	Car cleaner	Toronto	Wounded
Switzer, Alfred C.	Brakeman	Calgary	Wounded
Tanner, Raymond	Carpenter	Glen Yard	Wounded
Timms, Arthur Charles	Tuber	Outremont	Wounded
Todd, John	Wiper	Kamloops	Kiled in action
Toms, Edward.	Sectionman	Peterboro	Wounded
Turner, Arthur Roy	Locomotive fireman	New Brunswick Dist.	Wounded
Urquhart, James	Clerk	Winnipeg	Wounded
Vine, Henry William	Clerk	Calgary	Presumed dead
Wall, Michael J.	Clerk	Angus	Presumed dead
Wallis, Henry Lewis	Helper	Winnipeg	Wounded
Warner, W.	Cook	Montreal	Wounded
Websdale, James F.	Brakeman	Medicine Hat	Wounded
White, John W. C.	Locomotive man	Fort William	Wounded
Wilde, Walter L.	Air brake tester	North Transcona	Wounded
Whitehead, Hezekiah	Locomotive man	Lambton	Wounded
Wilson, Richard	Wiper	Lethbridge	Wounded
Williams, William H.	Cook	Montreal	Wounded

Shown on Honor Lists to date: Killed, 456; Wounded, 996; Total, 1,452.

The Switching Problem at Fort William.—A conference of railway officials and representatives of industries at Fort William, Ont., was held there recently. The switching question was left in the hands of W. F. Hogarth, President, Mount McKay & Kakabeka Falls Ry., to draw up proposals whereby all railways may have equal facilities to all industrial plants in the city limits. It was arranged pending the preparation of the plans, that the Mount McKay & Kakabeka Falls Ry. will take over the operation of the spur line to the industrial property owned by the city in the west end.

Cost of Railway Enquiry.—The cost of the commission which reported on the railway situation in Canada, recently, was stated in the Senate recently by Sir James Lougheed, to have been $70,088.41. W. M. Acworth received $15,330 for services and $1,127.99 for expenses; A. H. Smith received $137 for expenses, he has not yet been paid for his services; Sir Henry Drayton returned the cheque for $15,000 sent him for his services. Twenty-three engineers were employed in connection with the work, receiving $28,016.33 for their services, and $3,854.15 for expenses.

Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

Canadian Northern Ry. Employes are being canvassed to raise $101,000 a year for patriotic purposes. The idea is that the amounts subscribed will be deducted from the monthly pay and paid over to the local patriotic funds according to the number of men in the several districts.

Royal Naval Reserve, Auxiliary Motor Boat Patrol Section.—The Canadian Naval Service Department, during the fiscal year ended Mar. 31, entered almost 300 sub-lieutenants, and over 100 men, for duty as chief motor mechanics and motor mechanics, for this branch of the Imperial service.

Canadian Troops Reach England.—It was officially announced, Aug. 27, that the following, among other Canadian troops, had arrived safely in England: Forestry and railway construction drafts from Ottawa and Camp Borden; railway construction draft from Regina; no. 1 draft, railway troops, from London, Ont.; Inland Water Transportation draft from Montreal.

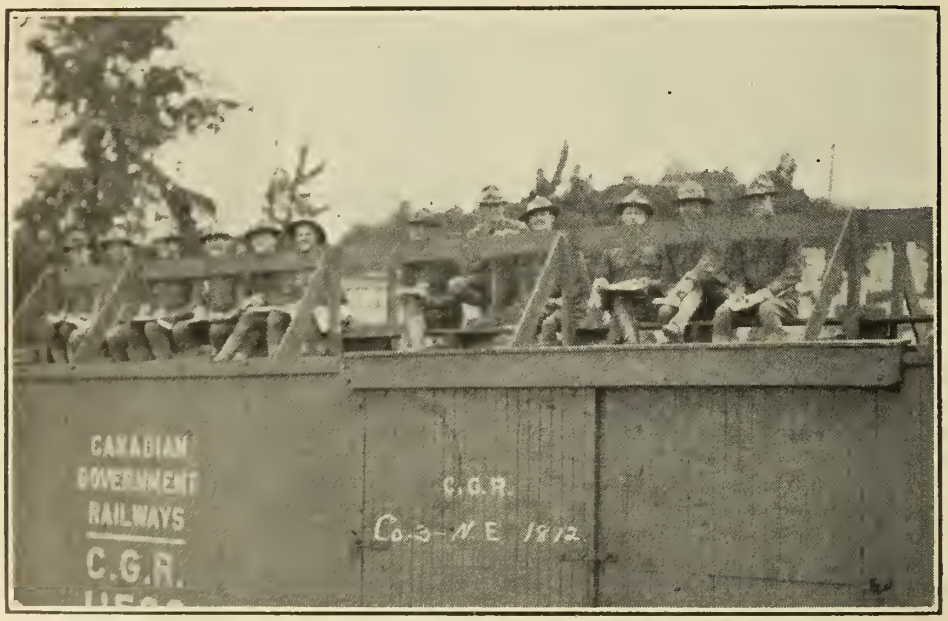
Railway Men and the War.—Sir Eric Geddes, M.P., First Lord of the Admiralty, in his maiden speech in the British House of Commons, recently, said: "You have been told that I am a railway man and that I was once a porter. That is true, and I am very proud of it. Railway men I hold in the highest regard, and that regard has been intensified by what I have seen of their work in France. The railway men out there have given movement to the army. The railways are now ahead of the guns everywhere, and their work has saved thousands of lives at the sacrifice of many of their own."

Royal Naval Air Service.—The selection and entry of Canadian officers for this service is being continued through the Naval Service Department. Up to the end of the last fiscal year, 382 officers were entered and sent overseas, and several have been decorated for good service.

Royal Naval Canadian Volunteer Reserve (Overseas Division).—The Admiralty accepted the Dominion Government's offer of a number of men belonging to this reserve force, and an overseas division was formed during last year. From the commencement of recruiting for this branch of the service, in the autumn of 1916, to the end of the fiscal year, 1,331 men were enlisted, of whom 1,188 were sent overseas.

Personal Notes.

Major F. D. Burpee, formerly Superintendent, Ottawa Electric Ry., Ottawa, Ont., who went overseas as major in the 207th Battalion, C.E.F., recruited in Ottawa, has been gazetted as a temporary lieutenant in the Canadian Railway Troops.



Canadian Government Railways Box Car upholding a portion of the United States Army at the Officers' Training Camp at Plattsburg, N.Y.

Lt. Col. J. J. Creelman, of the Field Artillery, C.E.F., who has been on active service since the beginning of the war, and who was some months ago made a member of the Distinguished Service Order, and also of the Russian Order of St. George, has returned to Montreal, and has announced that he will run for the House of Commons as a soldier's candidate in the St. Antoine district, there. He is a son of the late A. R. Creelman, K.C., at one time General Counsel, and a director, C.P.R., and is a member of the firm of Casgrain, Mitchell, Holt, McDougall, Creelman and Stairs, advocates, barristers, etc., Montreal. He is said to be the youngest artillery brigade commander in the service, being only 36.

Lieut. C. S. L. Hertzberg, M.C., who is on active service with the 7th Field Company, Canadian Engineers, has been transferred from associate member to member of the Canadian Society of Civil Engineers. He is a son of A. L. Hertzberg, M.Can.Soc.C.E., Engineer, Ontario District, C.P.R., Toronto.

Major Jas. A. Macdonnell, D.S.O., (temporary Lt. Col.) of the 1st Canadian Pioneers, familiarly known on the Pacific coast as "Big Jim," has returned to Vancouver on sick leave, after having been at the front for nearly two years.

Lt. Col. H. A. C. Machin, M.L.A. for Kenora, Ont., who went overseas in command of the 94th Battalion, C.E.F., which was recruited from the Port Arthur, Fort William and Kenora districts, and which was broken up after arrival in England, and who was subsequently appointed in command of the 1st Canadian Labor Battalion, which has been engaged in railway construction in France for the 4th Canadian Division, is in Canada on leave of absence.

Lt. Col. D. S. MacInnes, D.S.O., of the Royal Engineers, Imperial Army, who has been granted the French Legion of Honor, is a son of the late Senator Donald MacInnes, of Hamilton, Ont., who was for years a C.P.R. director, and is a brother of W. R. MacInnes, Freight Traffic Manager, C.P.R. He was born in Hamilton, July 19, 1870, graduated from the Royal Military College Kingston, Ont., in 1891, winning the sword of honor and the Governor General's gold medal; was made a second lieutenant in the Royal Engineers in 1891, lieutenant 1894, captain 1905; served in the Ashanti expedition in 1895-6, and was honorably mentioned (star); was through the South African war, 1899-1902, commanding the Royal Engineers throughout the defence of Kimberley; conducted operations in Orange Free State, 1900, and in the Orange River Colony the same year, where he was twice mentioned in dispatches and received the Queen's Medal, with three clasps, the King's Medal, with two clasps, and the D.S.O.; served under the Canadian Government, heading the organization of the Canadian staff service; was D.A.Q.M. General, Halifax, N.S., 1905-7; was appointed chief staff officer, Maritime Provinces command, Sept., 1907, till Mar. 31, 1908, when he was transferred to England, since which he has been a member of the general staff.

Lt. Col. C. H. Mitchell, M.Can.Soc.C.E., of Toronto, who was created a Companion of the Order of St. Michael and St. George recently, has been decorated with the Order of Leopold by the King of the Belgians.

Major R. Falshaw Morkill, Signal Engineer G.T.R., now serving overseas in the British army, has, it is stated, been appointed by the Director-General of Transportation to take over all signalling work in the area occupied in France and Belgium by the British forces, and is now at general headquarters.

Robert Patterson, formerly Master Mechanic, G.T.R., Stratford, Ont., and latterly with the General Car & Machine Works, Montmagny, Que., addressed a large meeting at Stratford recently, at which returned soldiers from Stratford and Perth County were welcomed home.

Lieut. Clifford Pestell, who is reported as lost in the North Sea, is said to have been in C.P.R. and G.T.R. service formerly, returning to England in 1915.

J. E. Pinault, who has resumed his duties as General Superintendent, Canada & Gulf Terminal Ry., Matane, Que., enlisted Jan. 20, 1916, in the 189th Canadian Battalion, as Major, and left for England, Sept. 21, 1916. On Feb. 25, 1917, he was recalled to Canada to re-

cruit railway construction men, and returned to Canada, Apr. 21, 1917, after spending four weeks in France. He resumed his railway position, July 1, 1917, and is now a reserve officer, C.E.F.

Lt. Col. G. S. Rennie, formerly Chief Medical Officer, Toronto, Hamilton & Buffalo Ry., and Dominion Power & Transmission Co., Hamilton, Ont., has, according to a press dispatch, been made administrator of all British, Canadian and United States military hospitals in the district near Rouen, France, as well as maintaining command of No. 2 Canadian General Hospital. For nearly two years he was in charge of a chain of hospitals in England, and left for France some two months ago to take an important command.

Major J. M. Rolston, M.Can.Soc.C.E., of Vancouver, has been created a Chevalier of the Legion of Honor, by the French Government, for services in railway construction. He graduated from the Royal Military College, Kingston, in 1900, and was for a time in the Grand Trunk Pacific Ry. service, during the building of the mountain section. When war broke out, he was in northern British Columbia. He left Canada as Captain in "Tobin's Tigers," and after serving two months at the front was transferred to a railway construction corps. He was mentioned by Sir Douglas Haig in dispatches in February last.

Capt. Wm. Stewart McTier, who was reported recently to have been awarded the Military Cross for gallantry in the firing line, is the son of A. D. McTier, General Manager, Eastern Lines, C.P.R. He went to the front with the first Canadian Contingent and has been twice wounded, first at Ypres, and lately at Vimy Ridge. At the outbreak of war he was on the ocean returning from Europe and immediately on landing joined the 13th Battalion under Lt. Col. Loomis, now Brigadier-General and D.S.O. He went to the front with that unit and fought with it at Ypres and Festubert. He was wounded by shrapnel and returned to Montreal to convalesce. On returning to the front he was attached to Brigadier-General Loomis' staff, the latter having taken over the command of a brigade in the meantime. After serving in that capacity for a short time one of Lieut. MacTier's feet gave out and an operation was necessary. On his return to the front on this occasion he was transferred to a Montreal Highland battalion and promoted to captain.

Lieut. R. N. Stuart, V.C., D.S.O., was for many years in service of the Allan Line Steamship Co., and since that line came under the management of Canadian Pacific Ocean Services, Ltd., has been second officer on the s.s. Alsatian. He is a son of the late Capt. Neil Stuart, of Prince Edward Island, and obtained a commission in the R.N.R. soon after the declaration of war. In the early stages he was awarded the D.S.O. for services of a distinguished character, and for further services has been awarded the Victoria Cross. It has not transpired what the nature of the services is, but it is understood that he was selected by his brother officers for the honor, under rule 13 of the Royal Warrant of Jan. 29, 1856.

Lieutenant A. E. Voysey, who is reported to have been killed in action, was, prior to enlisting for active service, chief assistant to European Manager, C.P.R., London, Eng.

Lt. Col. F. A. Wanklyn, who has been gazetted a Wing Commander in the Royal Flying Corps, is the eldest son of F. L. Wanklyn, General Executive Assistant, C.P.R.; Montreal. He was born at Montreal, Aug. 14, 1888; educated at St. Andrews School, Brockville, graduated from the Royal Military College, Kingston, in 1909; received a commission in the Royal Artillery (Imperial), in June, 1909; seconded to Royal Flying Corps in 1911. Since war broke out he has served as Flight Commander in France and Belgium, received the Military Cross June, 1915, and was mentioned in dispatches. In 1916 he was Squadron Commander in command of R.F.C. experimental depot at Orfordness, on the east coast of England, until gazetted Deputy Assistant Director at War Office, London. In July 1917 he was appointed Wing Commander, R.F.C., with lieutenant colonel's rank and sent to Canada to take command of one of the new aviation camps. He is now officer commanding at North Toronto.

Major Chas. Wesley Weldon McLean, D.S.O., of the Royal Horse Artillery, son of Col. (temporary Brig. Gen.) H. H. McLean, M.P. for Queens-Sunbury, N.B., and formerly President, St. John, N.B. Ry., has been given a second bar for distinguished service. Twice in the same day he went forward, at great personal risk, into a heavy barrage to reconnoitre. The following day he led a party under heavy shell fire, threatening to cause grave casualties, and saved the guns and ammunition. He served in the South African War and was in operations in Cape Colony, south of Orange River, 1899-1900, in operations in the Orange Free State, Feb. to May 1900, including operations at Paardeberg and actions at Poplar Grove and Driefontein, and in operations in Orange River Colony, May to Aug. 1900. He was given the Queen's medal, with three clasps, for his South African services.

Canadian Northern Railway Construction, Betterments, Etc.

Quebec Division.—The Dominion Parliament has extended for five years the time for building the projected branch line from St. Jerome to St. Eustache,

Mount Royal Tunnel and Terminal Co.—The Dominion Parliament has extended for five years the period within which the railways and other works authorized to be constructed by the company in Montreal may be built.

Central District.—The new passenger station to be built at Fort William, Ont., will be on Vickers St., between Victoria Ave. and Miles St. The main portion will be 2 stories high, with full sized basement and at the north side of the main building will be the baggage and express building, 1 story high. The main portion of the building will be 56 x 40 ft. with a total height of 28 ft. above the sidewalk. The baggage and express building will be 81 x 30 ft. and will be 16 ft. high over the sidewalk. The footings, foundation and basement walls will be of concrete. The main walls will be of stone and brick and the roof will be covered with felt, pitch and gravel. All floors will be double boarded with maple finish, and all doors and inside finish on ground floor will be selected oak. The first floor will be finished in fir. The interior of walls will be furred and plastered and all windows will be glazed with 32 oz. glass. The three main entrances will be covered over with ornamental iron canopies or marquises. The waiting room, ticket offices, women's waiting room and vestibule will have dados of burlap and the lavatories will be finished with porcelain enamel. The whole of the color scheme will be strictly in accordance with C.N.R. standard colors. The building will be steam heated throughout, and lighted with electricity. There will be cement sidewalk round three sides and paved platform, 700 ft. long, on the track side, the top of which will be level with the rail. The estimated cost is about $45,000. The plans have been prepared by thhe company's architect at Winnipeg, J. Schofield, and the work will be done under his supervision.

Tenders are under consideration for the erection of a 205 ft, addition to the company's freight shed on Water St., Winnipeg. J. Schofield, the company's architect, Winnipeg, is in charge.

Vancouver Terminals.—M. H. MacLeod, General Manager, Western Lines, is reported to have stated on a recent visit of inspection to Vancouver, that satisfactory progress was being made with the terminal works at False Creek, and that there was no doubt that the new station would be ready for operation by Dec. 31. A report has been prepared by F. L. Fellowes, City Engineer, covering the work yet to be done by the company on the terminal property in order to fulfil the terms of the agreement of Feb. 1913. He says that two pieces of work mentioned in the agreement are not likely to be accomplished within the time fixed, Feb. 1918, viz., the complete filling of False Creek to the grade of city datum ,and the boring of the double track electrified tunnel to give access to the terminal yards. Nothing has been done toward carrying out the latter work. Alderman Hamilton, chairman of the utilities committee, is reported to have said in an interview on Aug. 3, that the acquisition of the C.N.R. by the Dominion Government probably means that the city is at the end of its trouble with regard to the carrying out of the agreement under which the company acquired part of the False Creek flats from the city. The government was proposing to take over the line by the purchase of stock, which meant that the government would be in the same position as the company with respect to the city. He had no doubt that the terms of the agreement would be carried out by the government in a fair spirit.

Vancouver Island.—Track laying is reported to be progressing on the line between Victoria and Alberni, a number of Chinamen being employed. (Aug., pg. 309.)

A Grain Shipping Case.—The Matheson Grain Co. shipped a car containing 2,272 bush. of oats from the Dominion Government elevator at Moose Jaw to Ogema, Sask., on the C. P. R. The bill of lading showing the quantity of oats in the car was signed by a C.P.R. employe in the ordinary course, but the consignment was found on being delivered out to be 500 bush. short. The consignors made a claim against the C.P.R. which went to the courts, and was carried on appeal to the Supreme Court of Saskatchewan by the C.P.R. That court on Aug. 3, affirmed the judgment of the lower courts, giving a verdict for the grain company for the full amount claimed, with costs. The court held that the railway company, as a common carrier, was responsible for the safe delivery of the grain shipped.

The Pacific Northwest Passenger Association held its regular meeting at the Empress Hotel, Victoria, B.C., Aug. 10.

Mainly About Railway People Throughout Canada.

Arthur S. Piers, Manager, Real Estate Department, C.P.R., Montreal, was married there, Aug. 21, to Miss Marguerite Helen Lodge.

G. B. Kirkpatrick, formerly Surveyor General for Ontario, who died recently, aged 82, was, in his early life, in G.T.R. service.

J. M. Cameron, General Superintendent, Alberta District, C.P.R., returned to Calgary at the end of July, after a vacation trip to Alaska.

Sir Augustus M. Nanton, director, C.P.R., and Vice President, Winnipeg Electric Ry., spent a short holiday on the Pacific coast in August.

Lord and Lady Shaughnessy have been entertaining some members of the Governor General's family, the Ladies Maude, Blanche, Anne and Lord Charles Cavendish at St. Andrews, N.B.

D. B. Hanna, Third Vice President, Canadian Northern Ry., was at Kennebunk Beach, Me., for a few days early in August, Mrs. and Miss Hanna spending several weeks there.

George Ham, of the C.P.R. head office staff, Montreal, was entertained to dinner there, Aug. 23, by a number of his friends, in celebration of his 70th birthday. C. E. E. Ussher, Passenger Traffic Manager, C.P.R., presided.

B. Grant Mont, Senior Assistant Engineer on the construction of the Dominion Government dry dock at Lauzon, Que., has been transferred from a student member to an associate member of the Canadian Society of Civil Engineers.

R. M. Halpenny, Superintendent, and W. Jackson, Principal Assistant Engineer, Edmonton, Dunvegan and British Columbia Ry., were entertained to dinner at Edmonton, Alta., Aug. 6, by their associates, on leaving the company's service.

W. B. McAllister, who has been in Allan Line Steamship Co.'s service at Boston, Mass., for 20 years, has, since the taking over of the Allan Line offices by Canadian Pacific Ocean Services, Ltd., entered Furness, Withy & Co.'s service there.

George M. MacLeod, who died at St. John, N.B., Aug. 21, aged 65, was father of R. F. MacLeod, Assistant General Passenger Agent, Canadian Government Railways, Moncton, N.B., and A. MacLeod, who is in C.P.R. service in Montreal.

H. K. Goodwin, whose appointment as Local Treasurer, Western Lines, Canadian Government Railways, was announced in our last issue, was, prior to this appointment, for 25 years, clerk in the Comptroller and Treasurer's office at Moncton, N.B.

A. G. Balcer, heretofore in the office of Assistant Manager, Canadian Pacific Ocean Services, Ltd., Montreal, has been appointed Freight Claims Agent, in charge of loss and damage claims in connection with cargoes carried on the company's vessels. Office, Montreal.

G. W. Alexander, who has resigned as Treasurer, Western Lines, G.T.R., Detroit, Mich., spent the summer with his family in the Georgian Bay district. He will continue to reside in Detroit, and contemplates a leisurely tour around the world on the termination of the war.

E. Pennington, President, Minneapolis, St. Paul & Sault Ste. Marie Ry., and Spokane International Ry., and J. C. Belanger, Agent, M. St. P. & S. S. M. R., Minot, N.D., are being proceeded against at Minot, on a charge of importing intoxicating liquors into North Dakota.

George H. Pope, land valuator for the Dominion Government, who died at Winnipeg, Aug. 2, aged 82, was for some time in Grand Trunk Pacific Ry. service there as Right of Way Agent. His brother, W. W. Pope, is Secretary Hydro Electric Power Commission of Ontario.

L. C. Fritch, who recently resigned from the position of General Manager, Eastern Lines, Canadian Northern Ry., Toronto, was presented with a silver service by the company's officials, prior to leaving Toronto, on his appointment as General Manager, Seaboard Air Line Ry., Norfolk, Va.

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J. J. Rose
General Agent, Union Pacific System, Toronto

Lord Shaughnessy, President, C.P.R., dined with the Governor General at Ottawa, Aug. 9. The presence of several leading politicians gave rise to a report that he had been called upon for his views on the current political situation, and even went so far as to say that there was some likelihood of his being asked to head a national government for the remainder of the war.

H. B. Dufief, who has been appointed Assistant to Solicitor, Grand Trunk Pacific Ry., Winnipeg, was born at Washington, D.C., Sept. 16, 1883. He entered G.T.P.R. service, as Solicitor's assistant, at Winnipeg, in which capacity he remained until his present appointment. Prior to entering G.T.P.R. service, he was in the Chicago & North Western Ry.'s legal department, claims section, Chicago, Ill.

E. B. Hagarty, whose appointment as Local Auditor, Western Lines, Canadian Government Railways, Winnipeg, was announced in our last issue, was for some time District Accountant, Intercolonial Ry., New Glasgow, N.S., and since the operation of the National Transcontinental Ry. by Canadian Government Railways, he has been special auditor at Winnipeg under the Comptroller and Treasurer.

Robert Crosby, who was appointed Car Foreman, Canadian Northern Ry., Moose Jaw, Sask., recently, was born at Hawick, Scotland, May 2, 1886, and entered C.N.R. service Oct. 1, 1911, since when he has been, to Dec. 3, 1911, car repairer, Winnipeg; Oct. 4, 1911 to Apr. 1, 1912, car repairer, Atikokan, Ont.; Apr. 2 to June 9, 1912, car repairer, Winnipeg; June 10 to Aug. 8, 1912, car repairer, Rhien, Sask.; Aug. 9 to Oct. 28, 1912, car repairer, Emerson, Man.; Oct. 29, 1912 to Jan. 23, 1915, Car Inspector, Neepawa, Man.; Jan. 24, 1915 to June 2, 1917, Car Inspector, Blue River, B.C.

John Joseph Rose, whose appointment as General Agent, Union Pacific System, Toronto, was announced in our last issue, was born at Toronto, Nov. 22, 1870, and entered transportation service, Jan. 1885, since when he has been, to Jan. 1887, ticket clerk and stenographer, C. P. R.; Jan. 1887 to Feb. 1891, ticket agent, C.P.R.; Feb. 1891 to May 1892, ticket, telegraph and express agent, C.P.R. Parkdale; May 1892 to Oct. 1906, Travelling Passenger Agent, C.P.R.; Oct. 1906 to Mar. 1911, chief clerk to District Passenger Agent, C.P.R.; Mar. 1911 to Mar. 1912, Travelling Passenger Agent, Robert Reford Co.; Mar. 1912 to July 1, 1917, Canadian Passenger Agent, Union Pacific System, all at Toronto.

Harry Roy Silcox, whose appointment as acting Resident Engineer, C.P.R., Toronto, was announced in our last issue, was born at Mount Brydges, Ont., Jan. 16, 1888, and was educated at the Collegiate School, Ingersoll, Ont., and McMaster University, Toronto, graduating with the degree of B.Sc. in 1912. During the vacations from July 1905 to Sept. 1908, he was engaged variously as section man, brakeman, fireman, operator, etc., on the Tillsonburg, Lake Erie and Pacific Ry., Tillsonburg, Ont.; May to Sept. 1909, on Grand Trunk Pacific Ry. construction with Fauquier Bros. and Foley, Welch & Stewart, contractors, Cochrane, Ont.; May, 1910 to Oct. 1915, chainman, rodman and transit man, C.P.R., Toronto; Oct. 1915 to Apr. 1916, Inspector, Canadian Inspection Co., St. Catharines, Ont.; Apr. 1916 to Apr. 1917, Inspector, Canadian Stewart Co., Toronto; Apr. to June 11, 1917, transit man, C.P.R., Toronto.

J. A. DeWolfe, who has been appointed Terminal Trainmaster, C.P.R., Moose Jaw, Sask., was born at Woodstock, Ont., Aug. 31, 1884, and entered railway service July 10, 1899, since when he has been, to Apr. 16, 1900, stenographer to Locomotive Foreman, G.T.R., London, Ont.; Apr. 17, 1900, to May 12, 1903, not in railway service; May 13 to June 23, 1903, clerk to Car Foreman, C.P.R., Toronto; June 23, 1903, to May 22, 1905, clerk in offices of Trainmaster, and of Superintendent, C.P.R., London, Ont., and Toronto; May 22, 1905, to May 7, 1907, clerk to Manager of Construction, C.P.R., Toronto; May 7, 1907, to une 21, 1909, secretary to General Manager, C.P.R., Montreal; June 23 to Aug. 23, 1909, assistant chief clerk, Second Vice President's office, C.P.R., Winnipeg; Aug. 24, 1909, to Dec. 31, 1914, chief clerk, Engineering Department, Western Lines, C. P. R., Winnipeg; Jan. 1, 1915 to Aug. 1,

1917, chief clerk to Vice President and General Manager, Western Lines, C.P.R., Winnipeg.

Morley Donaldson, M.Can.Soc.C.E., who has resigned from the position of Vice President and General Manager, Grand Trunk Pacific Ry., and Grand Trunk Pacific Coast Steamship Co., Winnipeg, on account of ill health, was born near Edinburgh, Scotland, May 1, 1851, and was educated in France and Canada. After spending some time in E. Gilbert & Co.'s engine works, Montreal, he entered W. & F. Shanly's service, and was with them during the construction of the Hoosac tunnel in Massachusetts. He entered railway service in 1881, as chief draftsman, Canada Atlantic Ry., since when he has been, consecutively, Superintendent Mechanical Department; Superintendent of Traffic and Mechanical Department, and to Apr. 11, 1898, Superintendent, same road, Ottawa; and on the absorption of the Canada Atlantic Ry. by the G.T.R., and its operation as the Ottawa Division, G.T.R., he was appointed Superintendent, retaining that position until June 17, 1912, when he was appointed to the position from which he resigned, Aug. 1.

William Pittman Hinton, who has been appointed Vice President and General Manager, Grand Trunk Pacific Ry. and Grand Trunk Pacific Coast Steamship Co., Winnipeg, was born at Hintonburg, Ont., Aug. 30, 1871, and entered railway service May 3, 1887, since when he has been, to Aug. 1891, clerk, freight passenger and car accounts, and travelling auditor, Canada Atlantic Ry.; Aug. 1891 to Mar. 1898, rate clerk, same road, and accountant, Canada Atlantic Fast Freight Line; Mar. 1898 to June 30, 1901, Assistant General Freight Agent, same road, and Canada Atlantic Transit Co.; June 30, 1910, to Jan. 30, 1913, General Freight Agent, same road; Jan. 30, 1903, to Oct. 1905, General Passenger and Freight Agent, same road; Oct. 1905 to Jan. 1907, General Agent, Passenger Department, G.T.R., Ottawa, Ont.; Jan. 1907 to Apr. 1909, Assistant General Passenger and Ticket Agent, same road, Montreal; Apr. 1909 to Feb. 1914, General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg; Feb. to Oct. 1914, Assistant Passenger Traffic Manager, same road, Winnipeg; Oct. 1914 to Nov. 11, 1915, Assistant Passenger Traffic Manager, G.T.R. and Grand Trunk Pacific Ry., Montreal; Nov. 11, 1915, to Aug. 1, 1917, Traffic Manager, G.T.P.R., and Grand Trunk Pacific Coast Steamship Co., and Western Traffic Manager, Canadian Government Railways, Winnipeg.

Great Britain's Reduced Railway Service.—Roughly speaking, all train services in Great Britain have been reduced by one-third during the war. The companies intend to adhere to the present restricted time table, and in no circumstances will extra holiday trains be run. So many locomotives have been withdrawn for service in France and man power has been so severely depleted that any increase in number is out of the question.

Punishment for Intoxication.—J. W. Maher, a C.P.R. relieving agent, was sentenced at Camrose, Alta., Aug. 14, to two months imprisonment for being under the influence of liquor at Bawlf station, of which he was in charge. He was also charged with stealing liquor from a shipment under his charge and was sentenced to one month additional therefor.

Fuel Economy on the Canadian Pacific Railway.

Alfred Price, Assistant General Manager, Eastern Lines, has issued a circular to employes as follows:

War conditions have brought about a serious situation in the fuel supply of the country, both for railway and commercial purposes. As a patriotic duty, therefore, if not for any other reason, everyone in the railway service particularly, is called upon to exercise every effort within his power to conserve the fuel supply, so that the transportation of supplies, which is such an important factor in the successful prosecution of the war in the interests of the Empire, may not suffer throughout the coming winter as the result of a fuel shortage. Although on some few divisions of Eastern Lines our fuel consumption per 1000 ton miles hauled has recently been showing some slight decrease as compared with previous years, on most divisions there have been heavy increases. It is, therefore, important that, quite apart from the heavy increased expense involved on account of the greatly advanced prices, we should economize in our consumption, so as, at the very least, to bring it down to what has been accomplished in the past. This appeal is, therefore, made to all employes to assist, in so far as they are personally able to do, in this important and patriotic effort in the country's interests. Close observation of the following rules by the various classes of employes mentioned, will materially assist in effecting a reduction in fuel consumption.

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Morley Donaldson
ex Vice President and General Manager, Grand Trunk Pacific Railway

Locomotive Foremen.—Keep in close touch with yard and be kept advised of the probable time of arrival of inbound engines, and advise the yard of the time engines in the round house will be available for service. Engines for regular passenger trains to be turned out of round house on time, unless trains are reported to be more than 30 minutes late. Unassigned engines that are dead, not to be put under steam while there are engines in the house or on shop tracks under fire and ready for service. Engines to be put under steam not to be lighted up more than an hour and a half before they are to be placed in charge of the engine crews. When it is known that an engine placed in the round house is to go into service again within 12 hours, the fire should not be dumped, unless upon special authority. Carefully select bank firemen and thoroughly post them in the best methods to employ in banking fires, and the proper amount of water and steam pressure required. Sufficient water to be put in boilers before fires are banked or dumped so as to avoid the necessity of having to work the inspirators while engines are in the round house. Excessive use of blowers to be avoided. Coal shutes and surroundings to be kept clean and all coal picked up regularly. Maintenance regulations, covering pistons, valves, mountings, boiler leaks, etc., to be strictly observed.

Hostlers.—Take charge of engines as soon as they arrive on the shop tracks and house them as quickly as possible. See that coal is properly trimmed forward on tenders, and so as not to fall off, at all coaling plants. Tenders to be given only the amount of coal prescribed by the superintendent and not to be overloaded. Excessive use of the injector and blower at the ash pit and on shop tracks to be avoided.

Air Brake and Car Inspectors.—Inspections and tests to be made promptly and thoroughly so as to avoid delays. Where there is yard testing plant in operation, endeavors to be made to have train line charged 15 minutes before the time set for departure.

Engineers and Firemen. — Examine their engines as soon as they come on duty, ascertaining condition of fire and build it up gradually so that when coupled on trains, start can be made with a good fire. Get away from shop track early enough to permit of engine being coupled to train at least 15 minutes before time set for departure. Take full advantage of velocity grades under conditions consistent with speed regulations. When switching is done at water stations take water after completion of switching, and while conductor is obtaining waybills and orders. On completion of trips, engine should be delivered to the hostler with sufficient water in boiler and a good fire in front of grates. Fire carefully and economically, avoiding waste of steam through safety valves.

Yardmasters and Yard Foremen.—Keep round house advised of probable arrival time of trains, and be kept advised of time engine in the round house will be ready for service. Keep tracks open for prompt movement of road engines between the shop tracks and trains. Use good judgment in ordering trains to leave at hours at which they will be ready and be able to get away. Avoid overloading engines in switching movements.

Conductors and Trainmen.—Where required to bring engines from shop track, be on hand to do so 25 minutes before time train is ordered for. Before beginning to switch cars first see that all hand brakes are released. Keep sharp look out for sticking brakes and air leaks, bleeding and carding cars when detected. On arrival at destination and clear on siding, detach engine and when required deliver it promptly on shop track. Avoid delays

within their control.

Train Dispatchers.—Order trains at hours when they can get away from terminals and move to best advantage. Anticipate train orders needed and have them ready before trains reach stations at which they are required, using "19" orders when permissible. Orders and telegrams, when at all possible, to be put out at stations where trains must stop for water or to meet other trains, so as to avoid unnecessary stops. Extra stops are expensive and result in a waste of fuel. Take adverse grades into consideration in deciding which train is to hold main track at meeting points arranged by train orders. Avoid the running of light engines and full tonnage trains in the same direction, but divide tonnage moving in the opposite direction to the preponderating traffic equally between engines moving in that direction.

Agents and Operators.—Avoid unnecessary stops and delays to trains, using train order hoops for "19" orders, clearances and telegrams. When switching is necessary prepare form 77a in triplicate, handing one copy to front trainman when train stops, the second copy to conductor, retaining the third on file.

[EDITOR'S NOTE.—The division superintendents are holding meetings of their local officers and employes, to enlist their interest in the campaign, and the management hopes to obtain very good results.]

The First Battalion, Canadian Railway Troops' Organization and its Work in France.

The organization of this battalion, under the name of the 1st Canadian Overseas Railway Construction Battalion, was started in Toronto, early in May, 1916, the head office being at 189 Queen St. West; branch offices being opened at St. John, N.B., Montreal, Ottawa, Pembroke, Hamilton, London, North Bay, Sudbury, Cochrane and Fort William. Recruits were taken everywhere throughout the territory between Halifax and Winnipeg, a few men coming from Edmonton and other western centres to enlist. On July 28, 1916, after recruiting was completed, the battalion went into camp at Valcartier, Que., for training, sailing for England on Sept. 13, 1916. While it was expected that a sojourn of at least two months would be made in England, the battalion found itself actually engaged on railway work in France on Oct. 28, 1916. Probably no other battalion from Canada spent so short a time in getting its men, and its training; and in afterwards getting overseas and down to actual business in France. There have been a number of changes in the officers since the battalion went overseas, owing to promotions, but with one exception, all the original officers are still with the battalion, the other, Capt. G. S. F. Grant, having been invalided home to Canada. The organization is now as follows:

Headquarters Company: Officer commanding, Lt. Col. Blair Ripley, M.Can. Soc.C.E., M.Am.Soc.C.E., Engineer of Grade Separation, C.P.R., Toronto; 2nd in command, Major T. T. Loudon, Professor Civil Engineering, Toronto University, and consulting engineer, Toronto; Chief Engineer, Major Wm. Monds, of Clarke and Monds, consulting engineers and contractors, Toronto; Capt. and Adjt., E. D. Toye, Storekeeper, Eastern Lines, Canadian Northern Ry., Toronto; Quartermaster, Capt. E. P. Muntz., B.A.Sc., Welland Canal staff; Paymaster, Capt. H. G. Henson, B.A.Sc., McGiill University; Medical Officer., Capt. C. P. Fenwick; Chaplain, Capt. E. F. Church; Transport Officer, Mechanical and Horse Transport, Lieut. G. O. Fleming, Toronto Ry.; Officer in charge Technical Stores and Equipment, Lieut. L. McD. Fleming, formerly private secretary to Sir George Bury, Vice President, C.P.R.; Veterinary Officer, Capt. T. R. R. Hogan.

A Company.—Officer commanding, Major J. B. Heron, Division Engineer, Canadian Northern Ry.; 2nd in command, Capt. G. B. Little, contractor, Canadian Northern Ry.; Lieutenants, G. A. Butler, Division Engineer, National Transcontinental Ry.; C. P. VanNorman, Engineer, Toronto and York Radial Ry.; F. G. Pusey, engineer and contractor; W. J. Wright, civil engineer.

B Company.—Officer commanding, Major A. R. Ketterson, Assistant Bridge Engineer, C.P.R.; 2nd in command, Capt. H. B. Muckleston, Assistant Chief Engineer, Natural Resources Department, C.P.R., Calgary; Lieutenants, G. H. Pethick, engineer and contractor; F. A. R. McNair, Superintendent, Toronto Works Department; J. A. Hamilton, Bridge and Building Master, C.P.R.; H. J. Black, Resident Engineer, C.P.R.

C Company.—Officer commanding, Major Holland, Division Engineer, National Transcontinental Ry.; 2nd in command, Capt. L. B. Allan, Assistant Engineer, City Works Department, Toronto; Lieutenants, W. J. Norman, Resident Engineer, C.P.R.; R. F. Francis, structural contractor; E. H. Jupp, civil engineer and contractor; O. P. Hertzberg, Engineering Department, C.P.R.

D Company.—Officer commanding, Major F. G. Cross, Inspecting Engineer, Natural Resources Dept., C.P.R.; 2nd in command, Capt. A. T. MacDonald, Resident Engineer, C.P.R.; Lieutenants, C. M. Saul, civil engineer; H. M. Jupp, engineer and contractor; H. R. McQueen, civil engineer; H. L. Gilmour, civil engineer; R. E. Lindsay, civil engineer.

The battalion's total strength is 1,062, including 6 warrant officers, 52 staff sergeants and sergeants, 89 corporals, and 40 lance - corporals, making a total strength of 1,065 all told. The transport consists of 10 riding horses, 100 teams of mules, 2 motor cars, 8 light motor lorries, 9 heavy motor lorries, 4 field kitchens, 4 water carts, etc. The equipment consists of practically the same articles that would be used in Canada under peace conditions. Each company and headquarters is furnished with first class engineering and surveying equipment, and each carries one surveyor with the regular survey party. Tools comprise practically everything that is necessary in building a road bed, culverts, bridges and buildings and the tracklaying and ballasting of a railway, and the size of the outfit can be judged from the fact that it took three train loads, totalling 130 cars to move the battalion from its former location in France to its present one. The battalion's headquarters staff is quartered, and move about in railway cars that have been fitted up specially for the purpose. These comprise an office car for the officer commanding and the second in command; orderly room car, in which the battalion's regular business, including preparation of plans and reports, etc., is carried on; tool car, messing car, cooking car, and two sleeping cars. The battalion also carries with it a pile driving apparatus, which was built in France, and occupies three cars. The majority of the men live in tents, but comfortable huts are being acquired to carry about with the battalion when conditions permit. They are collapsible and are easily taken down and set up again.

When theh battalion first arrived in France it was put on to double tracking of a then existing standard gauge line, which it double tracked for 8 miles, and station yards and terminals were doubled in capacity. In addition to the laying of track, putting in switches, ballasting, etc., the men moved 34,000 cu. yd. of earth, and the whole work was done in 28 days, which would probably compare favorably with similar work done in peace times in Canada. There was rather a novel experience on this work, in connection with putting in a water supply, which had been under consideration for months. Water was being hauled in in railway tanks and dumped into a reservoir, and on several occasions the consumption was such that the reservoir was nearly emptied before a further supply was brought in. A "push" was contemplated at the time, and it was deemed of the utmost importance that a safe and sufficient water supply be put in. Surveys were quickly made by members of the battalion, and it was found necessary to lay 30,000 ft. of 6 in. pipe line, and to pump the water against a head of nearly 300 ft. The pumps and other material were quickly secured and the excavation for the laying of the mains and the elevated water tanks were started at once. It was explained to the men that the work must be completed in less than two weeks time, and notwithstanding the terrible weather encountered, the system was in operation on the tenth day.

From the above mentioned work and location the battalion was suddenly moved on to light railways on a portion of the western front. Two weeks afterward it took over a portion of the French area, which was further augmented at a later date, and during last winter the battalion handled not only the maintenance of all the light railways in the ——— Army, but did all the construction on the forward lines, some of which ran well in advance of the field guns. The light railway handled in the area referred to constituted more than half of the light railways on the western front at the time. Six light railway construction and maintenance companies of 250 men each, were organized and worked with the battalion, under its instructions on this work.

The importance of light railways and the difficulties of maintenance and construction, should not be underestimated. Some of them are built in summer when the ground is dry, and when it is possible to operate them without ballast, and of course when winter comes on, the maintenance is a very big matter, the battalion's experience last winter being, that in some cases it took 20 men per mile, which is very large when it is considered that two or three men per mile will maintain standard gauge railways in Canada. For ballast, brick from ruined towns and villages is hauled in and

tamped underneath the steel ties, and where ballast is not obtainable, it is necessary to salvage boards, pieces of planks, sheets of galvanized iron, or whatever is available, to be laid longitudinally under the track to keep it from sinking into the mud, so that operations can be carried on and rations and munitions carried up to the men at the front. A good deal of not only construction but maintenance had to be done at times when weather conditions would not permit the enemy's viewing the battalion, otherwise heavy casualties would have resulted. This necessitated the doing of considerable work at night, and the choosing of dull and foggy days, which were not uncommon, for the rest. The lines of course were built as far as possible so as not to be under observation, but could not always be done.

When lines were taken over from the French, in order to keep things going, it was necessary for the battalion, not only to handle maintenance and construction, but operation also. The operation was very novel and pleasing to the men, and the locomotive men and firemen, fitters, etc., were brought into play. This was their work, and they were right at home again. The battalion was able to furnish 25 locomotive men immediately.

Last spring, when the German retreat began, the battalion was at once taken off the light railways and put on to standard gauge ones. Surveys were made quickly and the first 11 miles connecting up with a well known city which had been blown to pieces by the Huns before retiring, was put in and operated on the fourteenth day. The battalion had a good many trains off the track during construction, on account of the mud, shell holes, etc., but fortunately the line has been doing good service ever since. Four days after it was handed over for operation, it was munitioning and feeding 80,000 men. The battalion was very short of equipment on this work, and notwithstanding the fact that it had only 6 spike mauls of the regular pattern to put in the spikes, an average of a mile a day, including grading and track laying, was maintained. The rails and ties had to be man handled. The battalion had on this work, attached to it for labor, two brigades, consisting of the flower of the British Army, including many titled officers. One of them, an Earl, was called by the rest of the officers "Lizzie," and as a matter of fact they all had nicknames. The spirit of these officers was splendid.

On standard gauge work in that area last spring the battalion built altogether about 60 miles of track, the larger portion of which is double tracked, and the line was of such importance that it was ballasted with crushed rock. A large volume of traffic is being carried over it. It was blown up in one or two places by the enemy during construction, but quickly repaired without casualties. This line was carried so close to the Hindenburg line that the Army command deemed it wise to discontinue the work, which the men of the battalion were only too anxious at the time to carry on.

The battalion is now in a new area, and on a very agreeable piece of work, where its experiences will not be quite so strenuous as they were at a previous location. Since spring the battalion's equipment has been brought up to what it should be, and it is now in a position to do good work. Without the use of an American track laying machine the battalion accomplished a mile and three-quarters of standard gauge track laying in a single day.

Transportation Appointments Throughout Canada.

Canadian Northern Ry. — G. A. KEELER, heretofore Manager, Prince Edward Hotel, Brandon, Man., has been appointed Manager, Prince Arthur Hotel, Port Arthur, Ont., vice J. F. Harvey, resigned.

H. MILNES has been appointed Service Inspector, Sleeping, Dining and Parlor Car Department, Western Lines, Winnipeg.

P. K. HUNT, heretofore Assistant Manager, Chateau Frontenac, Quebec, Que., has been appointed Manager, Prince Edward Hotel, Brandon, Man., vice G. A. Keeler, transferred.

L. E. AYER, heretofore Commercial Agent, St. Louis, Mo., has been appointed General Agent there, with supervision of both passenger and freight matters.

Canadian Pacific Ocean Services, Ltd.—H. F. BRADLEY, heretofore Passenger

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W. P. Hinton
Vice President and General Manager, Grand Trunk Pacific Railway and Grand Trunk Pacific Coast Steamship Co.

Manager, Allan Line Steamship Co., Montreal, has been appointed Assistant General Passenger Agent, Trans-Pacific Lines, C.P.O.S. Office, Montreal.

A. G. BALCER, heretofore in Assistant Manager's office, has been appointed Freight Claims Agent, in charge of loss and damage claims in connection with cargoes carried on the company's vessels. Office, Montreal.

Canadian Pacific Ry.—B. A. NEALE, heretofore accountant, Lake Louise, Alta., is reported to have been appointed Assistant Manager, Chateau Frontenac, Quebec, Que., vice P. K. Hunt.

A. MENARY has been appointed Yardmaster, Farnham, Que.

A. L. DUBOIS has been appointed Passenger Department representative, French River, Ont., to Nov. 30, to look after the hunter traffic to that district.

J. A. DeWOLFE, heretofore chief clerk to Vice President and General Manager, Western Lines, Winnipeg, has been appointed Terminal Trainmaster, Moose Jaw, Sask., vice D. England.

S. F. PIERCE, heretofore acting Manager, Royal Alexandra Hotel, Winnipeg, has been appointed Manager, Hotel Palliser, Calgary, Alta., vice E. H. Godwin, resigned.

F. B. MacSWAIN, heretofore storeman, Ogden, Alta., has been appointed storekeeper, Calgary West, Alta., vice G. F. Rosengren, transferred.

G. F. ROSENGREN, heretofore Storekeeper, Calgary West, Alta., has been appointed Storekeeper, Lethbridge, Alta., vice N. C. Stibbs, transferred.

N. C. STIBBS, heretofore Storekeeper, Lethbridge, Alta., has been appointed Storekeeper, Nelson, B.C., vice D. S. Schofield, transferred.

D. S. SCHOFIELD, heretofore Storekeeper, Nelson, B.C., has been appointed Storekeeper, Revelstoke, B.C., vice T. W. Madden, transferred.

T. W. MADDEN, heretofore Storekeeper, Revelstoke, B.C., has been appointed Storekeeper, Coquitlam, B.C.

Grand Trunk Ry.—H. G. KELLEY, heretofore Vice President (Transportation, Maintenance and Construction), has been elected President, vice E. J. Chamberlin, resigned. Office, Montreal.

G. C. JONES, heretofore Vice President and General Manager, Central Vermont Ry., St. Albans, Vt., has been appointed Assistant to President, G.T.R. Office, Toronto.

U. E. GILLEN, heretofore General Superintendent, Western Lines, Chacigo, Ill., has been appointed Vice President, in charge of operation. Office, Montreal.

W. D. ROBB, heretofore Superintendent of Motive Power, has been appointed Vice President, in charge of motive power, car equipment and machinery. Office, Montreal.

O. W. DUFF, heretofore dispatcher, has been appointed Chief Dispatcher, St. Thomas, Ont., vice J. A. McLardy, resigned.

Grand Trunk Pacific Ry.—H. G. KELLEY, heretofore Vice President (Transportation, Maintenance and Construction), G.T.R., who has been elected President, G.T.R., vice E. J. Chamberlin, resigned, has also been elected President, G.T.P.R. Office, Montreal.

W. P. HINTON, heretofore Traffic Manager, has been appointed Vice President. and General Manager, G.T.P.R. and Grand Trunk Pacific Steamship Co., vice Morley Donaldson, resigned on account of ill health. Office, Winnipeg.

H. B. DUFIEF has been appointed Assistant to Solicitor, vice H. Wismer, resigned and enlisted in the United States Signal Enlisted Reserve Corps. Office, Winnipeg.

Kettle Valley Ry.—O. E. FISHER, heretofore Auditor-Traffic Manager and Superintendent, has been appointed Comptroller-Traffic Manager. Office, Penticton, B.C.

W. J. MULHERN has been appointed General Superintendent. Office, Penticton, B.C.

A. A. SMITH has been appointed Superintendent, vice O. E. Fisher, Office, Penticton, B.C.

New York Central Rd., West Shore Rd.—JOSEPH W. HICKSON, heretofore Contracting Freight Agent, Toronto, has been appointed General Canadian Freight Agent, in charge of Canadian traffic west of Sharbot Lake and Kingston, Ont., vice W. A. Wilson, retired under the pension system. Office, Toronto.

The Dominion Government's Policy Respecting the Canadian Northern and Grand Trunk Pacific Railways.

The Finance Minister announced in the House of Commons, Aug. 1, that the government had decided to make a demand loan of $7,500,000 to the Grand Trunk Pacific Ry. Co., to meet the deficit on operating account, and for betterments and rolling stock, the same to be secured by mortgage and to bear interest at 6%. He said that the government would take power to constitute the G.T.P.R. board of directors as it might see fit and that he looked forward to the government acquiring the line in the future. The G.T.R. would not be released from its obligations in respect to the G.T.P.R.

In regard to the Canadian Northern Ry., he said that the government already held $40,000,000 of the capital stock, and that it proposed to acquire the remaining $60,000,000 for the Dominion, making it the absolute owner of the C.N.R. system, including its many constituent and subsidiary railway, express, transfer, elevator, steamship, telegraph and other companies and giving the government entire control of the company's system from Nova Scotia to British Columbia. He gave notice of the following resolution to be moved in committee of the whole house:

"Resolved, that it is expedient to provide: That His Majesty may acquire on such terms and conditions satisfactory to the Governor in Council as may be set out in the agreement to be made with the owners and pledgees of not less than five-sixths thereof, and for a price to be determined as hereinafter provided, the 600,000 shares of capital stock of the Canadian Northern Ry. Co. (par value $60,000,000), not now held by the Minister of Finance, in trust for His Majesty.

"That the Governor in Council shall appoint one arbitrator, the said owners and pledgees shall appoint another, and the two so appointed shall appoint a third, or failing agreement as to such appointment, the third arbitrator shall be appointed by the Senior Judge of the Exchequer Court.

"The said arbitrators shall determine the value of the said 600,000 shares as of the date of the said agreement and the said arbitrators shall proceed in a summary way and may apply their own judgment in determining such value and may receive with respect thereto, such reports and statements authenticated in such way as they may decide and such evidence as they may deem necessary or helpful, examine witnesses under oath and hear the parties by counsel or representatives and that the unanimous determination of the arbitrators shall be final, but should the determination not be unanimous an appeal from such determination shall lie to the Supreme Court of Canada on behalf of the Governor in Council, or of the owners or pledgees, upon any question of law or fact, such appeal to be made within 30 days from the rendering of the determination.

"That the amount of the value so determined shall be paid out of the Consolidated Revenue Fund, or otherwise secured in accordance with the terms of the said agreement.

"That upon the making of said agreement, at least five-sixths of the said 600,000 shares shall be transferred to the Minister of Finance in trust for His Majesty, and if there be any of said 600,000 shares ont transferred as aforesaid, the Governor in Council may declare said shares to be the property of the Minister of Finance in trust for His Majesty, and the same shall thereupon become the property of His Majesty and shall be paid for pro rata with the shares so transferred.

"That so soon as five-sixths of said shares has ben transferred as aforesaid, the Governor in Council may assist the Canadian Northern Ry. Co., or any company included in the Canadian Northern Ry. System, in paying and settling any indebtedness of such company or postponing the payment thereof on such terms as may be agreed upon, and for such purposes may make advances out of the Consolidated Revenue Fund, may guarantee payment in whole or in part, and may give the obligations or securities of the government in connection therewith.

"That the Canadian Northern Ry. Co., and each company included in the Canadian Northern Ry. System, shall from time to time do such acts and things, make and issue such agreements, obligations and securities in connection with the payment or settlement or postponement of payment of the said claim as the Minister of Finance may require.

"That the necessary qualification shares for directors may be transferred to or allowed to remain in their names by the Minister of Finance on such conditions as he may determine."

After considerable debate, the resolution was agreed to on Aug. 9, and the Finance Minister at once introduced a bill providing for carrying out its terms. When the motion for the bill's second reading was under consideration, Hon. G. P. Graham, ex Minister of Railways, moved on Aug. 14, an amendment as follows:

"Whereas this Parliament was induced to guarantee the securities of the Canadian Northern Ry. for $45,000,000 on the representation that with that amount the said railway could be completed and operated without further aid from Parliament, which arrangement is contained in chap. 20 of 4-5 George V. And whereas by sec. 24 of the said act it is enacted as follows: 'If authorized by the Parliament of Canada, the Governor in Council may on such terms and conditions (if any) as Parliament may prescribe at any time while any event of default shall exist and be continuing, by order declare the equity of redemption of the Canadian Northern Co. and of all other persons whomsoever in the mortgaged premises to be foreclosed, and thereupon the equity of redemption of the Canadian Northern (and of such other persons) in the mortgaged premises and every part thereof shall be and become absolutely barred and foreclosed, and the same shall thereupon be vested in His Majesty in right of the Dominion of Canada, any statutory enactment or any rule of law or equity to the contrary notwithstanding. And whereas the Minister of Finance in introducing this measure stated that the company is unable to pay its underlying interest charges and to continue the operation of the road. And whereas the report of the commissioners appointed by the present government to investigate and report upon the conditions of the Canadian Northern Ry. states that there is no value, either actual or potential, attached to the capital stock of the C.N.R. Co. It is therefore resolved that in the opinion of this house, Parliament should proceed to take over the said railway for the benefit of the people of Canada under the said provision of the said act, and that the capital stock of the said C.N.R. Co. should be considered in the said foreclosure order as possessing no value and that nothing should be paid therefor."

This amendment was negatived on Aug. 16 by a vote of 67 to 41, the second reading was carried by the same vote reversed, and the bill was subsequently taken up in committee of the whole, the debate continuing until Aug. 29, when the second reading was carried by the application of closure by a majority of 27.

During its passage through the house the bill was amended in several respects, and it may, of course, be further amended before being finally passed by the Senate.

The Daylight Saving Proposal.

The bill introduced into the House of Commons to provide for the time in Canada being in advance of the solar mean time during the summer months, commonly referred to as the Daylight Saving Bill, has been dropped for the present session. While the measure was introduced early in the session it did not come up for a second reading until July 23. The full text of the measure was given in Canadian Railway and Marine World for July.

The Minister of Trade and Commerce, who had charge of the bill, said in part: "Daylight saving is a somewhat new thing in most countries and absolutely new, on a national scale, in Canada. The arguments in favor of daylight saving during the summer months are based upon a good many considerations. The primary consideration is that of economy. The substitution of an hour of early daylight, which may be used instead of an hour of artificial light, naturally lends itself towards economy, particularly in the matter of lighting, and in the use of coal for the manufacture of gas, and of electric light. Outside of these reasons of an economic kind, there are many collateral considerations, which, though not financial, are perhaps more important." He then reviewed what had been done in other countries since daylight saving had been first mooted in 1908, as shown by the report presented by a Committee of the Imperial House of Commons in 1916. The summer time act was now in its second year of operation in the United Kingdom. The operation of this proposal in Canada had been in restricted areas, consequently its benefits could not have full force and effect. There were, however, strong testimonies of its good effect during 1916. To be really effective it must be adopted nationally, and it would be better if it would be put in operation in Canada contemporaneously with a similar measure in the U.S. In Canada a very thorough enquiry was made, at which the railway companies were represented. He read the following letter from Sir George Bury, of the Canadian Pacific Ry.

"There may be various views on the advisability of daylight saving, but there is one point on which there is no diversity of opinion, and that is if daylight saving is to be successful it must be a measure passed by the government at Ottawa, which would require that all clocks in the

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Dominion be set ahead one hour at a stated time in the early spring, and set back an hour at a stated time in the fall. The daylight saving scheme has been tried in many localities, and the main reason for its failure was entirely due to it not having been universally adopted all over Canada. As I see it, if the people of Canada as a whole wish daylight saving, it should be adopted; and so far as the railways are concerned, I believe they would gladly support it. If it were made universal in Canada, it could not, in any way, embarrass train operation."

Canadian Pacific Ry. Construction, Betterments, Etc.

New Brunswick District.—An exceptionally heavy thunderstorm on July 30 did considerable damage to the C.P.R. transcontinental line through Maine. As a result of the floods consequent, several embankments between the Quebec boundary and just east of Brownville Jct., were washed away, leaving the ties and rails suspended in some cases. At 25 miles east of Megantic, between Holeb and Jackman, Me., where 100 ft. of embankment which had been carried out by a flood on June 18, was under repair, the new work was carried away, with the addition of 50 ft more of the old embankment. At other points the sections of the embankment washed clean out were 20, 25, 50 and 60 ft. respectively and from 15 to 25 ft. in depth. A smaller amount of damage was done at other points of the 70 miles included in the area covered by the flood. No accidents resulted, but traffic had to be diverted while temporary repairs were made. Through traffic was resumed Aug. 4.

Northern Colonization Ry.—The Dominion Parliament has extended for five years the time within which to build the projected line from Labelle, westerly to Rapide de L'Orignal, now called Mont Laurier, thence westerly to Timiskaming Lake, Que. The railway has been built by the C.P.R. from Labelle to Mont Laurier, 57 miles.

Interprovincial and James Bay Ry.—The Dominion Parliament has extended for five years the time within which to build this projected line from Lumsdens Mills, on the C.P.R. line from Mattawa into the Kippawa Lakes district, to Des Quinze River, Que. The company is authorized to sell or lease its line to the C.P.R.

Ontario District.—The company, according to a press report, contemplates adding a number of sidings in the yard at Cobourg, Ont.

The second track construction between Leaside Jct. and North Toronto consists, we are officially advised, of building a second track between Leaside Jct. and North Toronto for the main line, and a third track over Reservoir ravine to form a switching lead to the yard. The switching lead will be laid on the location of the existing track, and the two new main lines will be on the north side. The old steel trestles over both ravines will be removed entirely and will be replaced by reinforced concrete structures. During construction the traffic will be carried over temporary trestles which are being erected. The contract for the erection of the bridge 1.8, aat Reservoir ravine, has been let to Wells & Gray, Toronto, and that for bridge 0.9, near Leaside Jct., to the Dominion Bridge Co.

Manitoba District.—Application is being made to the Public Works Department, Ottawa, for approval of plans of a raft or float proposed to be constructed by the company in McKellar River, Fort William, Ont., for the protection of the north pier of the railway bridge there.

Saskatchewan District.—The Board of Railway Commissioners has authorized the company to build a spur track to serve the Canada West Electric Co.'s warehouse at Regina.

Grant Hall, Vice President and General Manager, Western Lines, accompanied by J. G. Sullivan, Chief Engineer, made a trip of inspection recently through the country south of the Weyburn-Lethbridge line in connection with a projected extension there. The Saskatchewan Railways Department is desirous of having a section of the country beyond the Frenchman River given a railway connection and G. Spence, M.L.A., accompanied the officials on the trip.

Alberta District.—The distance between Weyburn, Sask., and Lethbridge, Alta., when the new line is finally completed between these points will be 455.8 miles, not 55.8 miles as stated in our last issue on pg. 309, owing to a compositor's mistake which was unfortunately overlooked in proof reading.

A contract is reported to have been let to Thomas, Jamieson & McKenzie Co., for laying out an additional stockyard at Calgary, at an estimated cost of $75,000. In connection with this work the city council has under consideration the company's application to lay a spur track across Burns Ave., to increase the railway facilities at the yard.

Application was made to the Edmonton City Council, Aug. 14, for authority to lay a spur track crossing 111th St., and was referred to the City Commissioner for consideration.

British Columbia District.—A contract is reported to have been let to S. E. Junkins & Co. for salvaging the track material and snow sheds on the abandoned section of the line in Rogers Pass between Courlie and Stoney Creek, about 18 miles. This piece of line has been abandoned since the completion of the Connaught Tunnel. The old right of way will, it is said, be converted into a tourist highway in time for the tourist season of 1918.

The Kaslo and Slocan Ry. was built under a charter passed by the British Columbia Legislature in 1892. It has been operated for a considerable period by the C.P.R., and the Dominion Parliament has now declared it a work for the general advantage of Canada, and has given the company power to amalgamate with or sell its line to the C.P.R. The lines authorized to be built are: From Kaslo along the Kaslo River and its north fork to Fish and Bear Lakes, and thence to the mines in the vicinity of Carpenter and Sandon Lakes; a branch line from the confluence of the north and south forks of the Kaslo River to Montezuma mining camp; and from the mouth of Bear Creek to Jardine's mining camp. The line has been built from Kaslo to Slocan, 29 miles. (Aug. pg. 309.)

WANTED.—Complete sets of 12 copies of Canadian Railway and Marine World (Railway and Shipping World) for years 1904, 1905, and 1906. If you have these for sale write Box 3780 Canadian Railway and Marine World, Toronto, stating price.

Traffic Orders by Board of Railway Commissioners.

Penalty for Misdescription of Freight.

General order 200. July 26. Re application of C.P.R. under sec 29 of the Railway Act, for an order amending order 3249, dated June 29, 1907, approving Canadian Freight Classification 13; it appearing to the board that the clause objected to does not provide definitely the penalty recoverable under the order—it is ordered that order 3249 be amended by striking out the clause which reads: "That any person or company violating the provisions of sec. 400, sub-sec. 1, of the Railway Act, shall, in addition to the regular toll, be liable to pay to the company a further toll not exceeding 50% of the regular charge." and substituting therefor the following clause, viz.: "That any person or company violating the provisions of sec. 400, sub-sec. 1, of the Railway Act or any amendment thereto, shall, in addition to the regular toll, be liable to pay the company a further toll of 50% of such regular charge."

Increased Rates on Grain and Grain Products.

General order 202. Aug. 2. Re proposed increased rates on grain and grain products in the portion of Canada east of and including Fort William, which were included in, and were subsequently withdrawn by the applicants from, the application of the railway companies for a general increase in freight rates in eastern Canada, known as the Eastern Rates Case judgment and general order in which issued June 19, 1916; the said application with respect to grain and grain products having been renewed by tariffs filed by the companies and suspended by order 26172, June 5, 1917: Upon hearing the application at Ottawa, June 1, in the presence of counsel for Canadian Pacific, Grand Trunk, and Canadian Northern Railways, and the report and recommendations of the Chief Traffic Officer, judgment, dated July 17, was delivered by the Assistant Chief Commissioner, and concurred in by Commissioner Goodeve, a certified copy of it being attached hereto. It is ordered that order 26172 be rescinded, and the tariffs enumerated therein are hereby authorized, subject to the changes to be made therein as set forth in the said judgment dated July 17, which is made part of this order.

Transportation of Dangerous Articles Other Than Explosives.

General order 203. Aug. 11. Re application of Canadian Freight Association, for approval of regulations for transportation of dangerous articles other than explosives. It is ordered that the proposed regulations, as amended, marked A and certified by the Board's Secretary, on file with the board, be authorized, with the following exceptions:

(1) That all the restrictions pertaining to "Oil, described as 'oil,' or 'oil, n.o.s., or 'petroleum oil,' or 'petroleum oil n.o.s.' as described in the list at page 8 of the regulations, be struck out, except that paragraph 1867 (c) be amended to provide for a certificate on the shipping order, over the signature of the shipper, or of his duly authorized agent, in the following terms: "This is to certify that the above mentioned barrels contain .... oil only, and are in fit and proper condition for safe transportation."

(2) That the barrels at present in use for the carriage of wood alcohol, when labelled as required by the regulation pertaining thereto, be accepted for transportation, provided that the shipping order bear a certificate over the signature of the shipper, or of his duly authorized agent, in the following terms: "This is to certify that the above mentioned barrels contain wood alcohol only, and are in fit and proper condition for safe transportation."

(3) That paragraph 1892 of the regulations be amended to provide that when the necessary supplementary stripping to the car lining is furnished by the shipper, he shall be allowed therefor $2.50 a car.

(4) That all reference to paints be eliminated from the regulations.

Transportation of Explosives.

General order 204. Aug. 11. Re application of Canadian Freight Association for approval of revised regulations for the transportation of explosives: It is ordered that the said revised regulations as amended and filed by letter dated Dec. 16, 1916, from the Chairman, Canadian Freight Association, on file with the board and certified by the board's Secretary be authorized for the observance of the railway companies which accept explosives for carriage. It is further ordered that general orders 100, Jan. 16, 1913, and 105, May 22, 1913, be rescinded.

Cars Partially Loaded with Canned Goods or Live Stock.

26365. July 23. Re stopover charge for completion of part carloads of canned goods in transit: Whereas certain railway companies have published and filed schedules effective during the present month, showing an increased charge for stopping cars containing partial loads of canned goods for completion to full carloads in transit, notwithstanding that order 25527, Oct. 13th, 1916, has not been rescinded. It is ordered that the increased charges for stopping cars containing partial loads of canned goods or livestock for completion to full carloads in transit, contained in the following schedules of the carriers named, be disallowed, and the pre-existing charges for the said services are hereby continued from and including July 30 until further ordered.

Transfer Tracks at Rosetown.

26386. July 31. Re application of boards of trade of Moose Jaw and Rosetown, Sask., for an order directing the Canadian Northern and Canadian Pacific Railways to provide transfer facilities between their respective railways at Rosetown, Sask. It is ordered that the Canadian Northern be directed to construct a transfer track between its railway and the C.P.R. at Rosetown; detail plans to be filed within 30 days from date; the work to be completed within 60 days from the approval of the plans; and the cost of constructing the track to be apportioned equally between the Canadian Northern and the C.P.R.

Interchange Tracks at Port Hope.

26400. Aug. 1. Re application of Town of Port Hope, Ont., for an order requiring the interchange of traffic between the Canadian Pacific and Grand Trunk Railways there. It is ordered that the C. P. R. be directed, at its own expense, to construct interchange tracks between its railway and the G.T.R. at Port Hope, detail plans of the tracks to be submitted within 30 days from date for the board's approval and the track to be completed within three months after the approval of the plans.

Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending Aug. 10, 1917.	Wheat. bushels.	Oats. bushels.	Barley. bushels.	Flax. bushels.	Totals. bushels.
Fort William—					
C.P.R.	324,381	377,781	18,396	.....	720,558
Consolidated Elevator Co.	226,401	140,837	15,593	52,359	435,190
Empire Elevator Co.	164,432	215,556	13,672	125,083	518,743
Ogilvie Flour Mills Co.	413,127	79,942	13,034	.....	506,904
Western Terminal Elevator Co.	104,324	176,417	7,482	125,244	413,467
G.T. Pacific	332,274	389,445	21,379	43,833	786,931
Grain Growers' Grain Co.	320,072	392,980	17,957	.....	731,000
Fort William Elevator Co.	15,109	94,176	4,066	57,443	170,794
Eastern Terminal Elevator Co.	161,688	219,555	8,786	.....	390,029
Port Arthur—					
Port Arthur Elevator Co.	780,008	1,003,600	131,991	59,527	1,975,276
D. Horn & Co.	141,477	119,183	11,724	56,109	328,493
Dominion Government Elevator	474,188	662,131	46,220	91,233	1,273,772
Grain afloat	240,498	186,104	22,340	29,474	478,416
Total Terminal Elevators	3,698,069	4,057,768	333,440	640,305	8,729,582
Saskatoon Dom. Govt. Elevator Co.	85,212	72,480	4,018	8,751	170,461
Moose Jaw Do. Govt. Elevator	217,673	33,540	1,962	.....	253,175
Calgary	16,295	21,135	1,305	516	39,251
Vancouver	.....	.....	.....	.....	.....
Total Interior Terminal Elevators	319,180	127,155	7,285	9,267	462,887
Depot Harbor	198,714	.....	.....	.....	198,714
Midland—					
Aberdeen Elevator Co.	61,815	.....	.....	.....	61,815
Midland Elevator Co.	89,351	740,840	.....	.....	830,191
Tiffin, G.T.P.	5,000	409,478	.....	.....	414,478
Port McNicoll	431,803	1,660,562	3,945	.....	2,006,310
Collingwood	.....	33,555	.....	.....	33,555
Goderich	253,087	284,546	1,000	.....	538,633
Western Canada Flour Mills Co.	169,335	.....	.....	.....	169,335
Kingston—					
Montreal Transportation Co.	185,449	81,175	.....	.....	266,624
Commercial Elevator Co.	15,087	77,100	.....	.....	92,187
Port Colborne	962,969	276,778	.....	.....	1,239,747
Prescott	.....	.....	.....	.....	.....
Montreal—					
Harbor Commissioners, No. 1	699,820	1,691,298	129,745	.....	2,520,863
Harbor Commissioners, No. 2	799,020	740,777	14,446	.....	1,554,243
Montreal Warehousing Co.	578,181	1,011,458	82,684	.....	1,672,323
Quebec Harbor Commissioners	1,855	47,914	.....	.....	49,769
West St. John, N.B.	.....	.....	6,252	.....	6,252
Halifax, N.S.	219,725	.....	.....	.....	219,725
Total Public Elevators	4,671,211	7,055,481	238,072	.....	11,964,764
Total quantity in store	8,688,460	11,240,404	578,797	649,572	21,157,233

*Corn.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

26322. July 14.—Authorizing C.P.R. to divert road allowance at grade across its tracks at mile 2.5, Kerrobert Subdivision, Sask.

26323. July 13.—Amending order 1330, July 25, 1906, re crossing of G.T.R. by Napierville Jct. Ry.

26324. July 14.—Relieving Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) from providing further protection at crossing at mileage 150, near Vancouver, B.C.

26325. July 18.—Ordering Montreal & Southern Counties Ry. to rearrange stops by certain trains at Springfield Park, Que.

26326. July 17.—Approving C.P.R. plan showing clearances of outside track to Pier D, at north end of Granville St., Vancouver, B.C.

26327. July 18.—Ordering C.P.R. to protect crossing of Rockland Ave., Outremont, Que., by gates operated from elevated tower, to be operated day and night.

26326. July 17.—Declaring that excess charges on shipment of tough wheat (G.T.P. 312409), shipped to Keewatin account of G.T.P. embargo at Fort William, amounted to 2½c per 100 lb.; and authorizing Grand Trunk Pacific Ry. to rebate to Farmers Club Grain Co., Winnipeg, the excess amount.

26329. July 19.—Ordering that Canadian Northern Ry. station at Birch Hills, Sask., remain as at present located, platform to be extended 50 ft. west.

26330. July 16.—Approving agreement between Bell Telephone Co. and Weedon Telephone Co., June 7.

26331. July 17.—Dismissing application of Village of Fort Qu'Appelle, Sask., for order directing Grand Trunk Pacific Ry. to provide level crossing to connect with Segwin Ave.

26332. July 18.—Authorizing C.P.R. to build extension to spur for Regina Development Syndicate, Ltd., Regina, Sask.

26333. July 17.—Authorizing Town of Pointe Aux Trembles, Que., to carry Sixth Ave. across Canadian Northern Quebec Ry. within town limits.

26334. July 18.—Amending order 25202, July 24, 1916, re Edmonton Radial Ry. crossing of Grand Trunk Pacific Ry. at 27th St., Edmonton, Alta.

26335. July 17.—Ordering that 1/3 of cost of building bridge over Hereward Road, Victoria, B.C., be paid by Esquimalt & Nanaimo Ry., balance by municipality; cost of grading highway and approaches to be paid by municipality.

26336. July 18.—Authorizing C.P.R. to remove spur at mileage 9.0. Arborg Subdivision, Man., at Airdale, and to eliminate station from its tariffs.

26337. July 18.—Approving agreement between Bell Telephone Co. and the Hope Lumber Co.'s telephone system, June 14.

26338. July 19.—Ordering Grand Trunk Pacific Ry. to remove gates between station grounds and town site of Ribstone, Alta.

26339. July 18.—Ordering C.P.R. to repair loading platform at Benalta, and extend it to accommodate 2 cars and for at least 15 ft. clear of buildings; to repair culvert and make approach to station platform and buildings safe, and to build crossing over track west of station from south to Railway Ave.

26340. July 20.—Authorizing Militia Department to build public crossing over C.P.R. 50 ft. east of westerly boundary of Lot 89, Winnipeg, Man., and declaring that leave to move to set aside this order is reserved to C.P.R.

26341. July 20.—Authorizing Canadian Northern Quebec Ry. to build spur for International Mfg. Co., Montreal.

26342. July 20.—Extending to Jan. 1, 1918, time within which Vancouver, Victoria & Eastern Ry & Navigation Co. shall complete bridge carrying North Road over its line near Sapperton, B.C.

26343. July 20.—Ordering that, for present and until earnings at Ribstone station, Alta., increase and business warrants employment of station agent, railway shall appoint caretaker, who shall have authority to act as grain agent, to see that station is kept clean and heated for passengers on arrival and departure of trains and care for l.c.l. freight and express matter.

26344. July 20.—Authorizing St. John & Quebec Ry. to operate trains over crossing of C.P.R. near mileage 20, Fredericton, N.B., without first stopping; and to operate over crossing, as provided by order 22559, Sept. 17, 1914; trains limited to 15 miles an hour.

26345. July 21.—Authorizing Village of Winnipegosis, Man., to build Jubilee Ave., Third St. and Second St. across Canadian Northern Ry.

26346. July 21.—Authorizing G.T.R. to build two sidings for Steel Co. of Canada, Belleville, Ont.

26347. July 23.—Authorizing C.P.R. to build spur for Toronto Electric Light Co., Toronto.

26348. July 20.—Ordering Canadian Northern Ry. to erect third class station at Birdview, Sask., to be completed by Oct. 31.

26349. July 21.—Authorizing G.T.R. to rebuild bridge 125 over Potawattami River, Owen Sound, Ont.

26350. July 21.—Relieving C.P.R. from providing further protection at highway 3¼ miles south of St. Jerome, Que.

26351. July 21.—Amending order 24610, Nov. 7, 1916, re crossing over C.P.R. at Ensign, Alta.

26352. July 21.—Authorizing Canadian Northern Ry. to build spur for Fort William Grain Co., Fort William, Ont.

26353. July 16.—Approving agreement between Bell Telephone Co. and Charlevoix & Saguenay Telephone Co. June 26.

26354. July 24.—Authorizing C.P.R. to build two spurs for Britnell & Co., Toronto.

26355. July 24.—Authorizing Canadian Northern Ontario Ry. to build spur for Trenton Cooperage Co., Tudor Tp., Ont.

26356. July 24.—Authorizing G.T.R. to build siding for Office Bureau, Ltd., Whitchurch Tp., Ont.

26357. July 24.—Authorizing British America Nickel Corporation, to connect its spur with C.P.R. in McKim Tp., Ont.

26358. July 24.—Authorizing C.P.R. to build spur for Gunns' Packing Co., Toronto.

26359. July 24.—Authorizing Steel Co. of Canada to build overhead narrow gauge railway on concrete trestles across G.T.R. on north side Lachine Canal.

26360. July 24.—Authorizing C.P.R. to build spurs for Wayagamack Pulp & Paper Co., on Bellerive Island, Que.

26361. July 24.—Authorizing G.T.R. to build siding and spur for Dupont Fabrikoid Co., New Toronto, Ont.

26362. July 24.—Ordering Canadian Northern Ry. to build fourth class station at Legal, Alta.

26363, 26364. July 24.—Approving Bell Telephone Co. agreements with Heath, Head & Grey Telephone Co., May 3, 1915; and Chisholm Tp., Ont., July 6, 1917.

26365.—July 23. Disallowing increased charges for stopping cars containing partial loads of canned goods of livestock for completion to full car loads in transit.

26366. July 3.—Relieving Grand Trunk Pacific Ry. from building highway over Government road allowance in Alberta, as authorized by order 26119, until public requirements demand otherwise.

26367. July 24.—Ordering Edmonton, Dunvegan and British Columbia Ry. to erect staton at Donnelly, Alta., plans to be filed for approval.

26368. July 24.—Ordering Alberta Government to pay towards cost of maintaining bridge in n.e. ¼ sec. 34, Tp. 45, Range 21, West of 4th Meridian, $100 a year, first payment to date from April, 1915, balance of maintenance to be paid by Grand Trunk Pacific Ry.; and that $700 deposited with Canadian Bank of Commerce at Edmonton, with accrued interest, be paid to G.T.P.R. as provided by order 11823, Sept. 19, 1910.

26369. July 24.—Approving changed location of C.P.R. station at Mara, B.C.

26370. July 25.—Authorizing clearance of rock loading bins to be erected by Grand Trunk Pacific Ry. over Edmonton Cement Co.'s spur in n.w. ¼ sec. 35, Tp. 45, Range 1, West 6th Meridian; knee braces shewn at top of diagram to be eliminated; no box cars to be used on siding, and no locomotive allowed to pass by or under east end of bin structure; sign post to be erected at east end of bin structure to this effect.

26371. July 24.—Authorizing C.P.R. to take certain lands in York Tp., Ont., for enlarging its terminals at West Toronto, Ont.

26372. July 26.—Ordering Canadian Northern Ry to build a station at Kuroki, Sask., to be completed by Sept. 15.

26373. July 24.—Authorizing Town of Kenora, Ont., to remove bridge over Lawrinson's Creek, used for spur for Rat Portage Lumber Co., and operated by C.P.R.

26374. July 27.—Extending to Oct. 1, time within which Edmonton, Dunvegan and British Columbia Ry. shall build siding and station facilities at west switch of branch connection in Sec. 15, Tp. 78, Range 5, west 6th Meridian, Alta., as required under order 25961, March 22.

26375. July 25.—Ordering G.T.R. to widen culvert under its tracks near St. Gregoire Station, Que., to provide opening 40 sq. ft.; Quebec, Montreal and Southern Ry. to provide 24 in. pipe under its tracks at certain points and 30 in. pipe between St. Gregoire station and G.T.R. and change three 15 in. pipes under G.T.R. interchange track to 24 in., work to be done within 60 days

26376. July 27.—Authorizing City of Toronto to build double track electric street railway at grade over Don industrial spur and G.T.R., protection to be settled by Board's engineer.

26377. July 27.—Approving agreement between Bell Telephone Co. and Muskoka River Telephone Co., Sept. 21, 1915.

26378. July 26.—Dismissing application of Great North Western Telegraph Co., C.P.R., and Grand Trunk Pacific Telegraph Co. for order amending order 162, March 30, 1916, approving conditions of telegraph forms used by companies reserving leave for companies to apply for a stated case, for Supreme Court of Canada upon question of law involved.

26379. July 26.—Relieving C.P.R. from speed limitation of 10 miles an hour at highway crossing at mileage 7.67, St. Romuald de Farnham Parish, Que., upon installing improved type of automatic bell, 20% of cost to be paid out of railway grade crossing fund.

26380. July 27.—Extending for four months from May 1, time for completing C.P.R. interchange track on Pinnacle St., Belleville, Ont., required under order 25980.

26381. June 20.—Ordering C.P.R. to raise grade of and extend spur to Gibson, McCormick & Irvine Co., Toronto, Ont.

26382. July 26.—Approving agreement between Bell Telephone Co. and Emily Tp., Ont., July 17.

26383. July 28.—Amending order 23169, Jan. 6, 1915, re Canadian Northern Ontario Ry. location through Trenton, Ont.

26384. July 30.—Rescinding order 22200, July 11, 1914, requiring packages containing celluloid to be conspicuously labelled "Celluloid—Inflammable."

26385. July 24.—Ordering Canadian Northern Ry. to install shelter sheds for hogs at Mannville, Lavoy, Ranfurly, and Vegreville, Alta., to be completed by Sept. 1, company to dig 25 ft. or bore 40 ft. at Volmer, Alta., to obtain water for use in stock yards.

26386. July 31.—Ordering Canadian Northern Ry. to build transfer track with C.P.R. at Rosetown, Sask., to be completed within 60 days from approval of plans; cost apportioned equally between C.N.R. and C.P.R.

26387. July 26.—Ordering G.T.R. to rebuild crossing under it stracks on Lot 379, Laprairie Parish, Que.

26388. July 26.—Ordering C.P.R. to remove platform and shelter from north to south side of Bolger Creek, Ont., and trestle.

26398. Aug. 1.—Ordering C.P.R. to install its class A2 standard station at Magrath, Alta., to be completed by Sept. 1, 1918

26390. July 26.—Approving revised location of C.P.R. siding between Stations 84-50 and 101, and across Summerhill Ave., at grade in Toronto.

26391. Aug. 1.—Requiring Canadian Northern Ontario Ry. to stop trains on flag at Trenton Jct., Ont.

26392. Aug. 2.—Prohibiting C.P.R. from allowing cars to stand within 125 ft. of centre of Horne Ave., Mission, B.C.; signboard to be erected at point 125 ft. from centre of street, containing notice to trainmen that cars must not be placed between such signboard and Horne Ave.

26393. Aug. 3.—Authorizing C.P.R. to build highway crossing over its line between Lots 8 and 9, Con. 5, Kirkpatrick Tp., Ont.

26394. Aug. 2.—Amending order 26357, July 24, substituting McKim Tp. for Murray Tp. This error was noticed and corrected in our summary before this amending order was issued.

26395. Aug. 3.—Dismissing International Bridge Terminal Co.'s application to build branch line along Front St., Fort Frances, Ont., from junction with Canadian Northern Ry. at Front St. to Shevlin-Clarke Lumber Co.; and to cross or join C.N.R. with its railway lines.

26396. Aug. 3.—Authorizing Niagara, St. Catharines and Toronto Ry. to build spur for Herbert Morris Crane and Hoist Co., Stamford Tp., Ont.

26397. Aug. 2.—Authorizing G.T.R. to build siding for James Bogue, Peterborough, Ont.

26398. Aug. 3.—Approving proposed change of location of C.P.R. station at Carey, Man.

26399. Aug. 3.—Authorizing C.P.R. to build spur for Independent Quarries, Ltd., at Garson, Man.

26400. Aug. 1.—Ordering C.P.R. to build interchange tracks with G.T.R. at Port Hope, Ont.; to be completed withn three months after approval of plans which are to be submitted within 30 days from date.

26401. Aug. 3.—Authorizing C.P.R. to build spur and change location of present siding for E. W. Gillett Co., Toronto.

26402. Aug. 3.—Authorizing Canadian Northern Ry. to build highway over its railway between n.w. ¼ sec. 9 and s.w. ¼ sec. 16, Tp. 36, Range 5, West 3rd Meridian, Sask.

26403. Aug. 7.—Authorizing Algoma Central & Hudson Bay Ry. to build branch line at mileage 132.33, maian line, in Tp. 28, Range 20, Algoma District, Ont.

26404. Aug. 7.—Relieving G.T.R. from providing further protection at St. Laurent Road crossing, near South Durham, Que.

26405. July 26.—Authorizing Niagara, St. Catharines & Toronto Ry. to cross certain highways in Thorold and highway to Allanburg, Ont.

26406. Aug. 8.—Approving G.T.R. plan of steel superstructure for high level bridge over Trent Canal at Campbellford, Ont.

26407. Aug. 11.—Extending for three months from date time within which C.P.R. to erect fences along both sides of its right of way from Lavant station south to mile 37.

26408. Aug. 10.—Amending order 26371, July 24, re C.P.R. diversion of St. Clair Ave., Toronto.

26409. Aug. 10.—Authorizing Canadian Northern Saskatchewan Ry. to cross certain highways on its Wroxton-Yorkton line.

26410. Aug. 11.—Extending to Nov. 15 time in

which St. Martins Ry. shall complete certain work which St. Martin's Ry. shall complete certain work on bridges on its line.

26411. Aug. 10.—Extending for 30 days time within which C.P.R. is to build flag station at Grant's Crossing, mileage, 50.5, Waltham Branch.

26412. Aug. 11.—Authorizing Grand Trunk Pacific Branch Lines Co. and Canadian Northern Ry. to operate trains over crossing in n.w. ¼ Sec. 18, Tp. 48, Range 25, west 2nd Meridian, Sask.

26413. Aug. 11.—Authorizing C.P.R. to divert road allowance on eastern boundary of s.e. ¼ Sec. 5, and on southern boundary of s.w. ¼ Sec. 4, Tp. 7, Range 19, west 4th meridian.

26414. Aug. 11.—Approving rearrangement of interlocking plant at C.P.R. crossing of G.T.R. at Woodstock, Ont.

26415. Aug. 11.—Approving C.P.R. clearances for 300-ton coal hopper track.

26416. Aug. 10.—Approving Northern Pacific Ry. bylaws authorizing A. M. Cleland and H. Blakeley to prepare and issue tariff of tolls.

26417. Aug. 11.—Authorizing C.P.R. to build second passing siding and to rebuild highway bridge across road allowance in Whitby Tp., mileage 76.92, Oshawa Subdivision, Ont.

26418. Aug. 11.—Authorizing C.P.R. to build spur for Constructing & Paving Co., at mileage 8.75, Galt Subdivision, Ont.

26419. Aug. 14.—Approving Central Canada Express Co. bylaw 7 authorizing C. Dowling, General Superintendent, to prepare and issue tariffs.

26420. Aug. 14.—Approving agrement between Bell Telephone Co. and Glengarry Telephone Co., July 30.

26421. Aug. 14.—Authorizing Saskatchewan Government to build highway crossing over C.P.R. in s.e. ¼ Sec. 12, Tp. 15, Range 14, west 3rd meridian.

26422. Aug. 13.—Authorizing Canadian Northern Ontario Ry. to take two portions of block G, Parry Sound, Ont.

26423. Aug. 14.—Prohibiting whistling by C.P.R., G.T.R. and Canadian Northern Ry. locomotives within limits of Brighton, except where necessary.

26424. Aug. 13.—Ordering Brantford & Hamilton Electric Ry. to erect shelter at Mountain Sanatorium.

26425. Aug. 9.—Relieving G.T.R. from providing further protection at blind line crossing near Petrolia, Ont.

26426. Aug. 15.—Rescinding order 26318, July 12, requiring G.T.R. to stop trains 94 and 14 at Oakville.

26427. Aug. 15.—Authorizing C.P.R. to build spur for Great Lakes Dredging Co., at Fort William, Ont.

26428. Aug. 15.—Authorizing Michigan Central Rd. to build spur for Quality Canners Co., near McGregors station, Ont.

26429. Aug. 15.—Approving plan showing proposed installation of half interlocking plant at crossing of C.P.R. and Hull Electric Ry at St. Hyacinthe St., Beemer, Que.

26430. Aug. 15.—Approving plan and description of proposed protection at bridge over Kaministikwia River, Fort William, Ont.

26431. Aug. 16.—Extending for three months time within which fences to be erected by Kettle Valley Ry under order 25967, March 27, Midway to Penticton, B.C.

26432. Aug. 16.—Approving plan showing proposed location of new G.T.R. station and track changes at Orillia, Ont., and rescinding order 26166, May 30.

26433. Aug. 17.—Extending for 90 days time within which bell may be installed at G.T.R. crossing of Dufferin St., Weston, Ont., as required by order 26105, May 11.

26434. Aug. 17.—Ordering that gates installed at crossing of Lake Shore Road by G.T.R. and C.P.R. at Vaudreuil, Que., he operated by day and night watchmen and rescinding order 22255, July 22.

26435. Aug. 16.—Authorizing Esquimalt & Nanaimo Ry. to build spur for Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C.

26436. Aug. 15.—Approving proposed cancellation by Marconi Wireless Telegraph Co. of requirements of minimum toll as for 10 words on messages between ship and shore filed as supplement to tariff C.R.C. 7.

26437. Aug. 17.—Authorizing C.P.R. to build third track across Clavet, Nelson and McDougal Sts. at grade and under Steven St., Port Arthur, Ont.

26438. Aug. 17.—Authorizing C.P.R. to build spur for R. A. Lister & Co., Winnipeg.

26439, 26440. Aug. 17.—Extending for 90 days time within which gates may be installed at crossing of Victoria St., Thamesville, Ont., by G.T.R., as required by order 26179, and for 60 days time within which bell may be installed at crossing of G.T.R. near Gowanstown, Ont., as required by order 26252.

26441. Aug. 17.—Authorizing G.T.R. to rebuild bridge crossing public road immediately north of Danville station, Que.

General order 198. July 16.—Granting extension of time until July 1, 1918, to railway companies subject to jurisdiction of board within which to make changes required under general order 128, July 20, 1914, companies to continue present practice of filing with the board monthly reports of progress made in complying with requirements of said order.

General order 199. July 24.—Prescribing regulations for equipment of locomotives with electric headlights, and providing a penalty of $100 for each failure to comply with requirements.

General order 200. July 26.—Amending order 3249 by striking out clause respecting violation of sec. 400, subsec. 1 of the Railway Act.

General order 201. Aug. 1.—Prescribing Car Demurrage Rules to supersede Canadian Car Service Rules prescribed by order 906 (General order 1), to become effective Aug. 20.

General order 202. Aug. 2.—Rescinding order 26172, June 5, and authorizing tariffs enumerated therein, subject to changes to be made as set forth in judgment, July 17, which is made part of this order.

General order 203. Aug. 11.—Authorizing with certain exceptions proposed regulations for transportation by freight of dangerous articles other than explosives.

General order 204. Aug. 11.—Authorizing observance of railway companies which accept explosives for carriage revised regulations for transportation of explosives as amended, and rescinding general orders 100 and 105.

General order 205. Aug. 15.—Requiring railway companies to stencil inches on the inside walls of cars used in grain traffic in Manitoba, Saskatchewan and Alberta, so as to show the depth of grain loaded; one stencil on each side of each door and 3 or 4 ft. therefrom; all such cars hereafter built to be so stencilled before going into service, and those now in service to be so stencilled from time to time when shopped for repairs.

Canadian Government Railways to be Under Board of Railway Commissioners.

A bill to amend the Government Railways Act has been passed by the House of Commons and was given its second reading in the Senate, Aug. 16. Section 3 provides that certain sections of the Railway Act, as amended and consolidated at the present session, shall apply to the Government Railways, which in section 2 are defined to include "all railways and all property and works in connection therewith owned, leased or in any way controlled by His Majesty in the right of his government of the Dominion of Canada, and all runnning powers or other rights held or enjoyed by His Majesty over or with respect to any other railway or part thereof." Section 4 provides that notwithstanding anything contained in the present or in the Railway Act no penalty can be imposed on the Crown or the Minister of Railways, and no order of the board requiring any expenditure of money shall have effect until it has been approved by the Governor-in-Council. Section 5 provides that the board may, subject to the approval of the Governor-in-Council, make general rules regulating the practice and procedure to be followed in cases affecting the government of railways. Section 6 repeals all sections of the Government Railways Act of 1906 which are inconsistent with this measure. Section 7 makes provision for the preservation of the rights of His Majesty, given by the Expropriation Act, or by the Exchequer Court Act, or any other general act; preserves the jurisdiction of courts; provides that pending litigation and agreements are not to be affected, and that existing bridges, crossings, etc., are to be maintained until any orders are obtained under the new state of things directing changes. The schedule sets out the various sections of the Railway Act which are applicable to the Government Railways. The measure is to come into force on the proclamation of the Governor-General.

It was explained in the House of Commons that the measure placed the Government Railways under the control of the Board of Railway Commissioners in the same way as other railways with the exception of claims against the railways and the appropriation clauses of the Railway Act. E. M. Macdonald, M.P., claimed that the position was an anomalous one and entirely new in the realm of government ownership and operation of public utilities. Did the Minister mean to say that he had no confidence in himself and his officers that he must have the benefit and advantage of the control of the Board of Railway Commissioners in order to properly operate the railways? In respect of the Intercolonial Ry., which was constituted by virtue of the terms of the British North America Act, the people of the Maritime Provinces should have been consulted. F. B. Carvell, M.P., on the other hand, contended that the bill did not go far enough. The government was operating railways and it should be liable to all the obligations of a railway company. He contended the present operation of the Intercolonial Ry. is political operation, and as long as it is run as a government road I am afraid it will be a political operation. An honorable member says, 'Not necessarily.' Well, there must be a great regeneration in the minds of the people of Canada if you can run a government railway without having it a political affair." Hon. G. P. Graham, formerly Minister of Railways, pointed out that it might as well be taken for granted that the result of the Intercolonial Ry. being put under the Board of Railway Commissioners would be to raise the rates. The Minister of Railways stated that the Intercolonial rates were lower than on other railways, and he hoped and trusted they would not be lowered, as it was hoped to get something for running the road.

Proposed Changes in Freight Bills of Lading.

The Canadian Freight Association has applied to the Board of Railway Commissioners, under sec. 340 of the Railway Act, for an order approving the amendment of the conditions of the forms of bills of lading approved by order 7562, July 15, 1909, by adding to the first paragraph of sec. 6 of the said conditions the following: "Such notice shall be held to have been duly given if deposited in the post office, postage prepaid, addressed to the person to be notified, or to the consignee if no such person be named, at the address stated therein," and for an order varying order 7562 accordingly.

It is stated that the object of the proposed amendment is to remove the doubt whether notice so sent is a sufficient compliance with sec. 6 as it now stands. It is also stated that the practice of railway companies has been to give notice under the said section in the mode suggested, and contends that any other requirement would be unduly expensive and oppressive, and it submits that both as respects the identity and address of the person to be notified the proposal affords a reasonably certain and prompt means of communication.

Railway Lands Patented.—Letters patent were issued during July, in respect of Dominion railways lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres.
Calgary and Edmonton Ry.	9,610.17
Canadian Northern Ry.	3,441.00
Canadian Pacific Ry.	20.385
Edmonton, Dunvegan and British Columbia Ry.	53.11
Grand Trunk Pacific Ry.	17.95
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	4,630.12
Total	17,772.735

Electric Railway Department

The Ottawa Electric Railway's New Cars.

The Ottawa Electric Ry. Co. has added to its equipment recently 3 semi-convertible, double truck, single end, p.a.y.e. cars of semi-steel construction, similar to its last previous order. The principal dimensions are as follows: Length of body, 33 ft.; length of front vestibule, 4½ ft.; length of rear vestibule, 6½ ft.; length over all, about 45¼ ft.; width of body, 8½ ft.

made a standard. The cars are also equipped with sanitary hand straps, H-B life guards, Coleman stationary fare boxes, and 3 heavy brass stanchions in the centre of the body of the car, extending from floor to roof, between the longitudinal seats.

Each car is mounted on no. 27 F-E-1 trucks and equipped with 4 Westinghouse 1-1-B-2 motors and 1-K 35 controller, also Westinghouse S-M-E air brake equipment.

The cars were built by Ottawa Car Manufacturing Co.

New Car for Ottawa Electric Railway.

The underframes are of steel; the side sills are composed of a 5 x 3 x ¾ in. L, rivetted to an 18 x ¼ in. plate, forming a plate girder, whose top flange is made of a heavy double beaded bar on the outside and a 4 x 3/16 in. flat bar on the inside, and stiffened over the bolsters with 4 ft. x ¾ in. flat bar about 10 ft. long. The posts are of 2¼ x 3/16 in. steel, fitted with best white ash, and rivetted to the side sills with large gusset plates, also rivetted to the belt rails and wall plates. The belt rails are of 2 x ½ in. round edge steel; the window stools are pressed out of no. 16 gauge steel, pressed to shape and rivetted to the belt rails. The letter boards are of 6 x ¼ in. steel plates, reinforced with plates and angles and rivetted to the side posts. The side panels, between the side sills and the belt rails are of no. 16 steel, and made so that they can be removed easily by taking out a few screws.

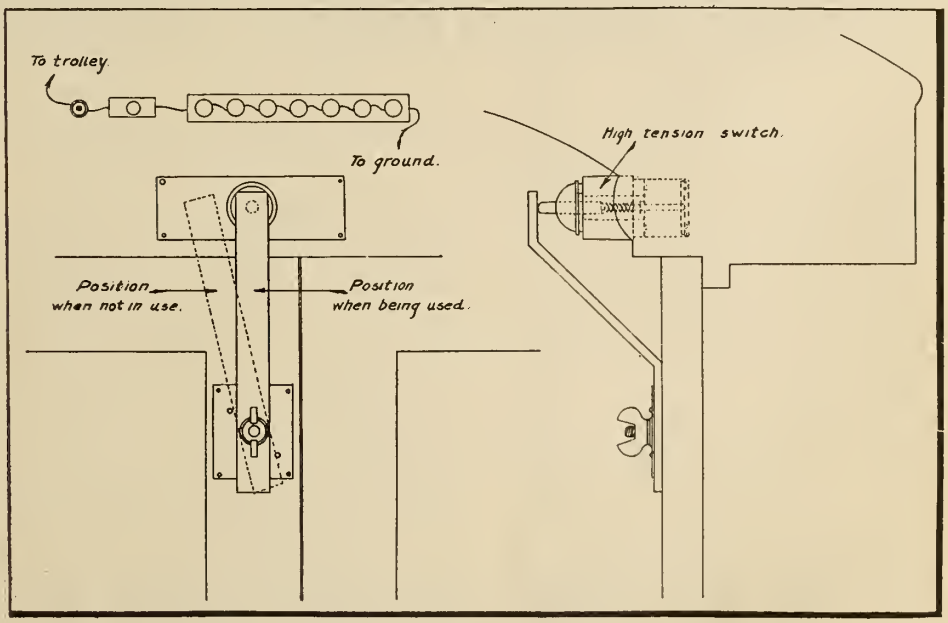
The roof is of monitor type, and built of wood, reinforced with steel carlines, and covered with no. 10 duck and painted. The exterior of the car is finished naturally in red cherry, also the sash and doors. All metal trimming in the interior of the car, such as sash locks, lifts, curtain brackets, etc., are of red bronze, highly polished and lacquered; the p.a.y.e rails, also the window guards, are of solid bronze tubing, with a special heavy wall. The cars are equipped with stationary rattan seats, with lift up cushions, to allow easy cleaning of the car floor. They are also equipped with curtains; buzzer system, with push button on each post; signal bells, alarm gongs, pneumatic sanders, conductors folding seat, also a seat for the motorman. The lighting is the railway company's standard, 3 circuits of 7 lights in series in each circuit, using special lamps, also using a method of automatically lighting front exit as designed by T. Ahearn, President of the railway company, some years ago, and which, owing to its adaptability, has been

Operation of One-Man Cars on Calgary Municipal Railway.

The Calgary Municipal Ry. is claimed to be the largest street railway system on the continent with the biggest proportion of one-man cars in operation. Superintendent McCauley is in favor of using one-man-cars entirely on the line, but the project is not altogether favorably entertained, and even the use of such cars to a moderate extent does not meet with general approval. The question came up for discussion by the city council Aug. 6, after considerable prior discussion. According to a report made to the Mayor on July 25 by Mr. McCauley, the operation of one-man-cars on the system for the first 5 days of July, saved $3,294.64 and if one-man-cars had been operated over all the system an additional $1,236.48 would have been saved.

City Commissioner Graves issued a statement Aug. 1, in which he said: "I wish to direct attention to statements to the effect that I am conniving with the Superintendent of the street railway to juggle the financial report of the railway and thereby bolster up a deficit that would influence the members of the city council in favor of the general operation of one-man-cars. The above statement is absolutely false, as I would never knowingly be guilty of such a practice." He then went on to state that the street railway accounts are audited monthly by chartered accountants; that its finances are at present on as sound a basis as is possible under present day conditions; and that he has nothing whatever to do with its finances, nor with the distribution of the accounts. In conclusion he said: "The railway belongs to the public and it is in the interest of all citizens that this department be able to meet its annual expenditures and not become a burden on the taxpayers of the city. Further, it is at least some achievement that the railway can be operated at its present low fares, when numerous other railways in the United States are applying to utility commissions for permission to increase their rates, and are invariably receiving the consent of such boards to this course."

A special committee of the City Council to investigate the cost of operation of one-man-cars, as well as two-man-cars was appointed as a result of the meeting Aug 6 on the Mayor's casting vote, the appointment being made an amendment to a motion to endorse the one-man-car system. The committee met Aug. 7, appointed Ald. Broatch chairman, and directed that information be tabulated by the City Electrician and the Controller.



Automatic Lighting Arrangement, Ottawa Electric Ry. Cars.

Lethbridge Municipal Ry. employes are asking an increase of 22½% in wages, and that men employed on one-man cars be given 5c an hour extra.

The Sandwich, Windsor and Amherstburg Railway's Franchises.

At a public meeting held in Windsor, Ont., recently, called by the joint transportation committee for Windsor and Walkerville, a resolution was passed recommending the councils of the two municipalities to submit bylaws to the people granting an extension of franchise to the company with the right to purchase the entire system at any time during the continuance of the same on giving one year notice. The committee presented a lengthy report, in which it was stated that the company's system is operated under nine different franchises, which will expire as follows: In Windsor and upon the belt line in Walkerville in 1922; franchise in Sandwich in 1931; the franchises for the Windsor & Tecumseh Electric Ry., on Sandwich St., in Windsor, Walkerville and Ford, and on the Walker Road, Walkerville, in 1934. The company claims a perpetual franchise on the line from Sandwich to Amherstburg, and from Askin's Point in Ford to Tecumseh, by virtue of owning the right of way. The question of acquiring the railway and running it as a public ownership enterprise by two, three or more municipalities was dealt with in the report. It was pointed out that legislation might be obtained to give the Essex Border Utilities Commission the necessary power to apply to the Hydro Electric Power Commission of Ontario, which could operate the system for the nine municipalities served. A conference was held with the officers of the railway, and they agreed, if given new franchises until 1931 in Windsor and Walkerville, to build the needed extensions at once and sell to the municipalities at any time, upon one year notice, the entire system at its actual value as fixed by a board of arbitration, the valuation to include no value whatever for the extended, i.e., new, franchises. The board of arbitration would consist of three men, one appointed by the company, one by the municipalities, and the third by the two appointed members. One half of the cost of arbitration would be borne by the company, and the other half by the municipalities. An agreement was reached whereby the municipalities might decline to take over the property of the company at the valuation set by the board of arbitration, but the award would be binding on the company. The company was not disposed to enter into any operating agreement for municipal control or supervision, such as in Cleveland or Chicago.

The committee recommended that the electors be given, as soon as possible, an opportunity to vote on both plans, viz.: (1) That the municipalities of Windsor and Walkerville build the tracks (across Ottawa St. in Walkerville and Erie St. in Windsor) and have them operated at a fair rental, to be determined by the Ontario Railway and Municipal Board, even though the rental does not meet the interest, sinking fund and maintenance charges. (2) That the company be given an extension of franchise to 1931, without franchise values attached, and the right to purchase the entire system at appraised valuation whenever the people wish to purchase, which will be governed largely by market conditions of money, material and labor. In conclusion, the committee said: "If the Ontario Hydro Electric Power Commission is to operate the system for the municipalities we must wait until after the war, because the Ontario Legislature passed an act in 1916 whereby the commission cannot borrow any money for new undertakings until after the termination of the war. In order to put the two plans before the people the two municipal engineers should ascertain the approximate cost of construction of needed tracks, poles and overhead wires, with the apportionment of such costs between Windsor and Walkerville, and the two solicitors should prepare the necessary franchise and debenture bylaws for submission to the electors."

At a meeting of the Windsor City Council, July 3, it was resolved to submit two questions to the people, the first whether they want to have the electric railways municipally owned, and secondly whether they are willing to grant an extension of the franchise to 1931, subject to conditions. (June, pg. 242; July, pg. 286.)

Calgary Municipal Railway Wages and Working Conditions.

An agreement signed June 22, between the Calgary, Alta., City Commissioners, and the Calgary Municipal Ry. employes provides for the following wages: Per hour, 1st year, 32c; 3rd 6 months, 33c; 4th 6 months, 34c; 5th 6 months, 35c; 6th 6 months, 36c; 7th 6 months, 37c. Five cents an hour additional is to be paid to motor-conductors operating one-man cars. Men operating one-man cars outside the boundaries of Eighth Ave. and Eighth St. West, and Seventeenth Ave. and Second St. East "shall be paid conductor and motorman's rate. Bonus included when not operated within these limits. Five cents an hour extra to be paid motormen when training students. Wages to be paid on the 6th and 21st of each month. Nine hours to constitute a day's work; straight platform rate to be paid for overtime, and time and a half for work on Good Friday, Victoria Day, Dominion Day, civic holiday, Labor Day, Thanksgiving Day, Christmas Day and New Year's Day. Fifty cents to be allowed employes for attending once a month lectures on street car practice. Regular and spare men are to be paid time, from time reporting to time relieved, when called for active duties; spare men to be allowed on hour for each report if not allotted a run or given two hours work at other employment.

Clothing to be supplied by the city to become the property of the men after six months, except as regards overcoats; first year men to pay half the cost of their clothing. Motormen and conductors are to be allowed to select their runs in accordance with their seniority in service, a new working to be posted every three months. Other sections provide for the granting of leave up to three months for men to go harvesting or proving up on homesteads; the recognition of the right to join any labor organization; giving the right to union men and conductors to be represented by a grievance committee, in the same way as non-union employes, for the settlement of grievances by arbitration; and guaranteeing the provision of all modern equipment for the safe and comfortable operation of the cars. The agreement is to be in force until April 1, 1918, and from year to year thereafter, unless either party gives 30 days notice, prior to April 1, in any year.

Montreal Tramways Mutual Benefit Association.

The report for the year ended April 30 gives the following summary of relief work done during the year:

	1916-17
Members disabled through sickness or injury	1,426
Visits made by physicians to disabled members	567
Consultations given by physicians to disabled members	8,329
Prescriptions issued	6,026
Paid for sickness and injury	$13,002.60
Paid for medicine	1,927.68
Paid for pensions	1,231.50
Paid for withdrawals	549.82
Paid for death and burial insurance	8,600.02

Twenty members died during the year. The committee reports the appreciation shown by the beneficiaries of deceased members for the prompt payment of the amount due to them for death and burial benefits. Since the formation of the association, to the end of April last, 261 members died, and the association paid in death and burial benefits $107,509.53. During the year a motorman requested to have his benefits commuted, which was agreed to by the committee.

The committee gratefully acknowledge a special Christmas donation of $2,500 from the Montreal Tramways Co., making the contributions received from the company $17,256.56, which amount, added to the fees and dues received from the members, $16,448.50, and interest received on investments and bank deposits, $10,239.87, makes a total revenue for the year of $43,944.93. The expenses being $35,463.93, leaves a surplus of $8,476.

The officers are: J. E. Hutcheson, President; Patrick Dubee, Secretary-Treasurer; the other members of the committee being C. Gagnon, E. A. Robert, N. Allard, A. Gaboury, N. Surprenant, A. S. Byrd, A. Morency, R. M. Hannaford, U. Perron, D. E. Blair, O. Morin, Hon. J. L. Perron, K.C., J. J. Gethings.

Winnipeg Electric Railway Co's Position.

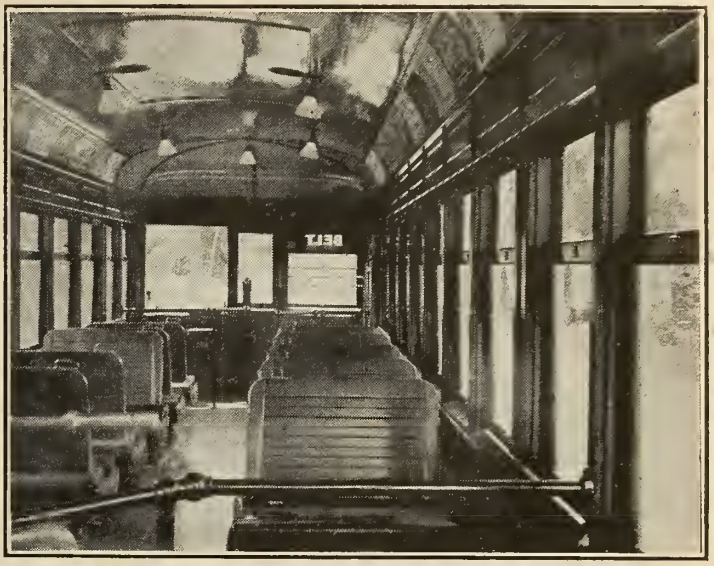
Winnipeg press dispatch, Aug. 15:— "The city was astounded at the announcement that for $100 shares of the Winnipeg Electric Ry., $36 was bid in Montreal today. This is the same stock for which $269 a share was actually paid in Toronto in March, 1912, and for which $268 a share was actually paid in this city in February of that year. The value of the property hinges on the action which the City of Winnipeg may take on the jitney issue. The lowest estimate that is made of the loss which the railway suffers from the jitney competition is $1,000 a day, or $300,000 a year. The number of passengers carried by the jitneys is estimated at 20,000 a day, or 500,000 in a year. What the jitneys are doing to the Winnipeg Electric Ry. is indicated by the company's statement for June. For the first time in its history, the receipts were not sufficient to pay operating and fixed charges, where the company before the war made $150,000 net a month. This year's June deficit was $11,000. The late Sir Wm. Whyte's fortune was largely in W. E. R. shares, and many leading Winnipeg citizens have large holdings."

New Car for Sherbrooke Railway & Power Co.

The Sherbrooke Ry. & Power Co., Sherbrooke, Que., has added to its equipment, for its Lennoxville line, a semi convertible car, of semi steel construction, 32½ ft. long, 8½ ft. wide, and 8 ft. high inside, with seating accommodation for 32 passengers, and standing room in the aisles and rear for 50 more.

It is mounted on a single truck and equipped with two 101 B motors and resistance. It is equipped with entrance and exit folding doors, and folding step device, the latter comprises a handle staff and swing rocker arm. By pressing on the steps or doors, the doors open automatically; they close by raising the step, or they can be shut by pulling them out from the ends. A whaleback top is especially constructed to prevent snow sticking, and the top is equipped with six stationary ventilators. Eight heaters are mounted under the seats, electric buzzers connect direct to the trolley. The car is equipped with life guard, and has illuminated revolving route signs. It is built of steel, hard pine and red oak and finished in birch, with ceiling of imitation bird's eye maple.

The car can be operated from both ends, as a two-man car, or as a one-man car. When used as a one-man car the rear end is closed, and passengers enter and leave at the front. When used as a two-man car, passengers enter from the rear and alight at the front. The car was designed by the company's Superintendent, F. X. Couture, and built in Sherbrooke under his direction, the approximate cost being $3,000. It is said the company may build some more as necessity arises.



Sherbrooke Railway & Power Co.'s Semi Convertible Car for Lennoxville Line.

Electric Railway Service in and Around Victoria, B.C.

The Victoria Times, in a review of Vancouver Island, in connection with the jubilee of Confederation, says: "The British Columbia Electric Ry and its allied industries form one of the big institutions of Vancouver Island." In addition to its electric power and gas enterprises, "the company owns a street railway trackage in the city and immediate suburbs of 41½ miles, 56 cars being operated. The company's property at Gorge Park is an integral part of the system, and a goodly part of the revenue is furnished by visitors and city people who have an inclination for this famous beauty spot. The street railway also reaches many other places of interest, including Cadboro Bay (within a short distance of the terminus of the Uplans line), Fowl Bay, the Willows Beach, Beacon Hill Park, and Esquimalt. There is also an interurban system from Victoria to Deep Bay, 24 miles, running along the whole length of the Saanich peninsula. This system takes in the Dominion Government Observatory, Brentwood Bay, the Dominion Government farm at Bazan Bay, and other points of interest. The round fare is $1.10. There are two freight trains a day each way. An interesting fact in connection with the city street railway system is that on a 5c fare, with transfer, it is possible to travel 9½ miles, from Esquimalt to the terminus of the Uplans line."

Electric Railway Fares Advanced in Massachusetts.

After a long and strenuous attempt to secure a raise in fares that would bring it a just and equitable increase in revenue, which it has demonstrated, time and time again, was perfectly justified and absolutely necessary under the changed conditions of operating, the Bay State St. Ry. Co., which has its headquarters in Boston and operates some 950 miles of line, has been authorized by the Massachusetts Public Service Commission to increase its fares on all lines to 6c, with certain adjustments and eliminations of transfers. For the present, in the opinion of the officials this will work out as a more or less satisfactory relief. In accordance with the order there is the proposition of selling in certain city sections and under certain restrictions ticket books at a slightly reduced rate from the straight 6c fare. The arrangement is to be under the plan of a 6 months trial. The order followed an agreement between the company and the communities served and varies somewhat from the company's original request.

There are three outstanding features to the new situation which are generally commendable: (1) the 5c fare as a unit is eliminated. (2) The free transfer is limited principally to cities. (3) The company's territory is divided into three classes, in order that each division may be charged according to traffic offered and expense of conducting the same. These classes are: Cities; towns connecting the cities; and rural territories.

About a year ago the company asked the Public Service Commission for a general increase on all its lines from a 5c to a 6c fare. After a protracted hearing before the commission and representatives of the various communities served, the company was allowed to advance its fare on certain rural lines to the 6c basis. This was far less than needed and particularly so, since in the intervening period the cost of operation, because of rising prices, had advanced to much higher levels. The events leading up to the present agreement were begun in April last when the company stated its case before the representatives of th communities affected and then went before the Public Service Commission for a new hearing. Meanwhile the representatives of the communities and the railway company reached an agreement whereby the company would be allowed to give a 6 months trial to an increase in fares from 5c to 6c and, with a few exceptions, pay a cent for transfers between cities and towns. The schedule provides, however, that roads' patrons be allowed to purchase 20 tickets for $1, which will not be good on Sundays and holidays and Saturday afternoons after 1 p.m. There are other schedules, such as increases in workingmen's tickets, and withdrawal of commutation tickets, which will be settled later. It is estimated that the new schedule will result in an increase of about $800,000 a year.

British Columbia Electric Ry. Investigation.—Adam Shortt of Ottawa, who was appointed a commissioner to make an investigation into the economic and other aspects of the transportation situation in Vancouver, Victoria, and other places in which the British Columbia Electric Ry. operates, began his investigation in Vancouver, July 15. After hearing considerable evidence, inspecting the system, the company's power development plant at Buntzen Lake, and the distributing plant, he went to Victoria, July 27, began his investigations there, and subsequently returned to Vancouver, where on Aug. 13 he recommenced hearing evidence.

Edmonton Municipal Railway Matters.

An Edmonton, Alta., correspondent wrote recently: "During the last year or so, economy of management has done much to lessen the burden of Edmonton's municipal railway, and it is now having the first opportunity for consolidation and getting things on a fair working basis. Last year there was a reduction in the cost of operation and management of about $16,000, and it is hoped to pursue this policy of economy still further and to make a better showing, even with a dwindling population to contend with. To begin with, jitney competition is no longer a menace to street railway profits. At the last session of the legislature an amendment was secured to the city charter which practically put the jitneys out of business, and in a very short time they were no longer to be seen on the streets.

"Now a trial is to be given to the operation of one-man cars, with the idea of lessening expenses. It is claimed by the railway superintendent that if the whole system was worked by one-man cars that there would be a saving of $100 a day in wages alone. The idea, however, is somewhat of a venture, as the one-man cars have been tested at Calgary with somewhat uncertain results, for, although the management say they are satisfied, yet there is a demand from a certain section that the old system should be reinstated. At Edmonton the cars have been tried on two or three stub ends of lines, with fair results, and other cars are being fitted for the work and will be tested on main routes. The railway employes have registered an objection to their use, sending a delegation to the commissioners and protesting on the ground that one-man cars are difficult of operation, will give a slow service, and fail to make any appreciable saving of expense.

"On the subject of the zone system, Commissioner Harrison says: 'We are carrying passengers for less than cost and know it. We cannot charge more than the straight 5c fare, and to get over it we must ask for an amendment to the city charter in order to use the zone system and charge for the distance that we carry. Now, for each passenger that we carry we go behind 1c, and by using the zone system we can obviate the great distances over which we now carry without making any revenue. What we have to do is to see how far we can carry passengers for 5c.'

"A straight 5c fare is charged on the railway, the only exceptions being that workmen's tickets, to be used before 8 a.m., are sold 10 for 25c, and school children are sold 12 for 25c. Special cars can be hired at $5 an hour. The average number of cars in daily service is 32, and the daily bill for motormen and conductors' wages is something like $460. The city has an agreement with the street railway employes, or rather with the local branch of the Amalgamated Association of Street and Electric Railway Employes of America, and the provisions of this agreement include all the employes of the department. In addition to the operating staff, there is a well organized staff at the barns, and Superintendent Moir says the department is equipped for and able to build its own cars should occasion arise.

"In 1916 the railway revenue was $524,737.15, and expenditure $664,334.81, leaving a deficit of $119,597.66. During April 879,848 passengers were carried, revenue totalled $42,015, and there was a surplus over operation of $2,433.55 Maintenance cost $5,345 and operation $26,013. This last was exceptionally heavy, the reason being that the figures include the payment of two damage claims for $8,336. Otherwise there would have been that much extra surplus over the cost of operation. Capital charges amounted to $00,875,03, and depreciation to $2,194.70, and there was a deficit of $18,636.17 on the whole."

Erection of Wires on Public Highways.

Under sec. 373 of the Railway Act, respecting the erection of wires along public highways, it had been held by the Privy Council that the word "company" therein mentioned, referred solely to a railway company, and that power companies, which were given powers by their special acts, could erect wires along public highways without the consent of municipalities concerned. Another section put certain restrictions on telephone lines, and distinguished between highways in cities, towns and villages, and those elsewhere. The House of Commons committee dealing with the revision of the Railway Act has made a change in this, and has defined a company to mean one with authority to erect wires, etc., for the transmission of electrical energy, etc., but not to include a railway, telegraph or telephone company. In dealing with this matter in the House of Commons, it was referred to as "the grossest piece of class or local legislation ever proposed, much less enacted into law." The House of Commons Railway Committee for many years has been carrying out the general provision of the act, that nothing shall be done in any municipality without the consent of the municipality, and if the parties interested cannot agree, they appeal to the Board of Railway Commissioners, whose decision is final. The changes made were especially aimed at the Toronto Electric Light Co., which is controlled by the Toronto Ry. Co. The change in the definition of the word "company," together with additional change in the section, which declares that the powers of such company are declared to have been so restricted, notwithstanding anything in a company's special act, since Jan. 31, 1907, are the chief points around which discussion centred. In the course of the discussion it was pointed out that the Toronto & Niagara Power Co., the parent company, had sold $15,000,000 of bonds in England in good faith, and that the change was now practically confiscating the company's rights and reducing the value of the bonds, if not entirely destroying it. A motion to strike out the portion making the law retroactive 10 years was negatived, and the clause as changed in committee stands.

During the discussion of the bill in the Senate committee, the clause which abrogates the right of the Toronto and Niagara Power Co., to distribute electrical energy within the municipality of Toronto, was vigorously attacked by J. M. Beck, a former Attorney General for the State of New York, on behalf of U. S. bondholders of the company, Glyn Osler, K.C., Toronto and A. Geoffrion, K.C., Montreal, for British and Canadian bond holders, and D. L. McCarthy, .C., for the Toronto companies concerned. The argument presented developed the point, that even if the T. & N. P. Co. acquired the Toronto Electric Lighht Co., which, he said, had not yet been done, the acquirement would be subject to all the franchise rights of the latter company, and therefore the city, which was favoring the proposed legislation, had nothing to fear. If the legislation were passed, the company would practically be put out of business, since the city would turn over to the Hydro Electric Power Commission, the business of the street railway and electric light companies, when they were acquired by the city, thus leaving the power company with 70,000 surplus horse power to dispose of and no customers. It was urged that the result would be to jeopardize a capital investment of $35,000,000 and injure Canada's credit abroad.

Representatives of the City of Toronto strongly urged the retention of the clause, arguing that public ownership and operation should not be subjected to competition by a private company, which did not have to secure consent before doing business in a municipality.

At the time of writing no vote has been taken on the matter, but reports indicate that he clause will be killed, or at least considerably amended.

Application for Increased Electric Railway Fares in New York State.

At Albany, on Aug. 7, in opening before the Public Service Commission the cases of 28 up-state electric railway companies applying for an increase of fares from 5 to 6c, Prof. T. Conway, of the Wharton School of Finance, submitted a statement based on reports to the commission that more than half of the petitioning companies were not only paying no dividends, but they were not even earning the interest on their bonds and faced receivership if they obtained no relief. He stated that the net corporate income of 27 of the companies, despite an increase of total business, had fallen from $1,143,294 in 1912 to $423,711 in 1916. In the same period the interest on bonds in default had increased from $11,875,000 in 1912 to $374,007,000 in 1916. He said that 14 of the 28 companies failed to earn their fixed charges in 1916. He said even a 6c fare would not make up for the loss of purchasing power of the nickel in the buying of supplies for street car service, and unless relief were granted some of the companies must go into receivership.

E. P. Waller, Manager of the General Electric Co.'s railway department, and R. Seybold of the Westinghouse Electric & Manufacturing Co., testified that all kinds of electric apparatus used by street companies cast from 50 to 125% more than in 1914. Labor costs in the production of these supplies had advanced from 30 to 40% since 1914; steel plates had increased 700%, copper 120, steel castings 100, steel forgings 340, coal 80, and brass 200%. Other witnesses gave similar testimony as to cost increases.

Strong opposition to the application was voiced by corporation counsels of more than 30 up-state cities which have organized to fight the proposed general increase.

The Ontario Legislature has amended the Assessment Act, so that an electric railway owned or operated by or for a municipal corporation is not liable to be assessed for business tax.

Toronto Railway Employes' Wage Arbitration.

The conciliation board, consisting of Judge C. G. Snider, Hamilton, Ont., Chairman; Duncan McDonald, formerly General Manager, Montreal Tramways Co., representing the company; and D. A. Carey, Toronto, on behalf of the employes, appointed to enquire into the complaints of the men which led to the strike lasting from July 11 to 13, reported to the Minister of Labor, Aug. 23. The report was signed by the chairman and the men's representative, and Duncan McDonald, on behalf of the company, dissented from the recommendations made, on the ground that the award was not warranted by the evidence placed before the board. He is reported to have said that though the company might not reject the award, he felt that he could not join in the recommendations without its positive assent. Following is the board's award:

In the operation of the lines the parties hereto agree with each other as follows: The company through its officers will meet and treat with the officers or representatives of division no. 113, who must be members thereof, and elected as representatives at the regular meeting, in all matters of grievance and dispute which may arise from time to time with any of the company's employes who are members of the association, and will meet and treat with any others of its employes in the same class who are not members of the association who may have grievance or disputes with the company.

From June 16, 1917, until the termination of this agreement, the wages per hour shall be as follows:

Motormen and conductors, first 6 months, 30c (to apply only to men employed after this date); second 6 months, 32c; second year, 35c; third and subsequent years, 37c.

Motor and truck repair service, first 6 months, 30c (to apply only to men employed after this date); second 6 months, 32c; second year, 35c; third and subsequent years, 37c.

Shedmen, foremen, 37c; operating shedmen, men who operate cars and do general shed work, 33c; shedmen, men doing general shedwork, but not operating cars, 32c; car cleaners, 31c.

Wages for motormen and conductors engaged in train work on Sunday shall be 4c per hour platform time in excess of weekday rates. Emergency crews of motor and truck repair men shall receive time and one-fifth for Sunday work.

Extra motormen and extra conductors are to receive the same extra remuneration for all trips as they have been receiving in the past. Extra men to be told off the night before for all crews known to be open, as far as this can be done without risk of leaving cars out of service on the following day. Motormen and conductors while in charge of trainers shall be paid 25c a day extra.

The company will pay half the cost of uniforms for motormen and conductors who have been in service for one year, and will provide free uniforms for mtormen and conductors who have been in the service longer than two years. No employe shall be required to pay for more than one uniform and a half. Regulations from time to time to be made by the company to provide for protection against loss in this matter from employes leaving the company's service.

All motormen and conductors (known as regulars) shall have their respective places in the barn to which they are assigned, in accordance with their continuous employment in the service, and men known as regulars longest in the continuous service as motormen and conductors at the barns in which they are employed shall have first choice of runs. The right of such selection of runs shall be granted at least four times a year.

All motormen and conductors required to take the car at the car house shall at the first time reporting for the day report to the car starter at least 10 minutes before scheduled time, and in the event of them not reporting 10 minutes ahead of time the car starter shall fill the runs with other men. When the relief point is not at the car house, men shall at their first time reporting for the day report to the car starter 15 minutes ahead of scheduled time, as at present. Motormen and conductors shall be relieved at a point nearest to the barn at which they are employed, and if required to go to any other point or barn after reporting at their own point or barn for the purpose of relieving or taking out cars shall be paid for time occupied in so doing. Motormen and conductors on scheduled runs shall be paid for any overtime caused by being late from being relieved or running cars into barn when such delay is ten minutes or over.

The company will provide seats on all cars. Motormen to have the right to use such seats upon certain portions of the system. Notice governing will be issued by the company from time to time.

No man to be given a set offday from month to month, but shall take offday in accordance with his position on the board, except in cases mutually agreed upon between the company and the men or their representatives. Motormen and conductors reporting for duty after being off sick, on production of a doctor's certificate of unfitness, shall not be required to go on duty until the following day, when they shall take their regular place.

Only men in the shops required for the necessities of the service shall be compelled to work on Saturday afternoon, excepting when, in the management's opinion, the services of all the men or any of them are required on Saturday afternoon to meet the necessities of the business.

Tools necessary for work in the motor shop shall be supplied employes. The men shall not take tools away from the shops, and shall be responsible for breakages and losses occasioned by their negligence, and must return tools in good condition; in default of doing so, they must pay for them.

Men in the motor shops and its branches shall be given five minutes in which to wash before leaving work, and any employe abusing this privilege, in the management's opinion, shall be subject to discipline or may be released from further service with the company.

The following regulations shall apply to motor and truck repair and shedmen: The company shall supply suitable locks and keys for lockers at the shops and barns, and in case a man loses his key, he is to provide another at his own expense. Rubber boats and coats are to be supplied for emergency crew at the different shops and barns. In case of a lay off or reduction of staff, the men laid off, other things being equal, shall receive preferential consideration as to being first taken into the service again. In laying men off, junior men,as a general rule, shall be the first men off, and in taking men on again, the senior men shall get first chance, qualifications being equal. On pay days the company will continue to pay until 8 p.m.

The following regulation is agreed upon as to discipline. Any employe against whom charges may be received will be required to report when off duty to the superintendent. His case will then be considered by the proper officials of the company, and will be dealt with upon the following principle: For minor cases he is to be warned. For serious cases, including drunkenness, drinking in uniform or drinking on cars, destruction of property, accidents through carelessness or neglect, missing fares through neglect, or carrying friends free, using stools on portions of route not allowed by the company, incivility to passengers, profanity on the cars, he may be disciplined or released from further service, but he shall in all cases have the right to appeal to the General Superintendent and have his case considered by him.

Any employe against whom a charge is received shall have the right of appeal in person to the General Superintendent, and, except as to a charge of dishonesty, may bring with him in his interest a deputation or any committee of the employes, or where the employe in question is a member of Division 113, he may be represented by its duly elected representative. Attendance in such capacity shall not operate to the employe's disadvantage. An employe attending on such deputation or committee shall give due notice to his car starter or foreman, and, if he be a motorman or conductor, shall take his car upon reporting to his car starter. Employes acting as dues collectors, board members, or otherwise doing work for the association, shall be allowed the time off required for such work.

All cars shall be properly equipped before being taken out each morning, but this shall not relieve the conductor and motorman from their obligation to see that their car is properly equipped.

The company will, upon application to the car starter or foreman, give leave of absence to employes for a reasonable period, when their services can be spared, and in the event of the refusal of the car starter or foreman, the matter shall be settled by the superintendent.

On lines where no office of the company is passed or close by, an officer of the company will collect and exchange fare boxes at points appointed for the purpose. The company shall also provide waiting room or shelter at these points if the city consents to the erection of the same on public streets and squares.

When the service was resumed after the strike on July 13, on the intervention of the Ontario Railway and Municipal Board, a temporary increase of 6c an hour was granted to the men, and the present award adds another 1c an hour to that increase, the men originally demanding an increase of 10c an hour. At a meeting of the employes, Aug. 25, it was decided by a vote of 684 to 289 to accept the award.

Up to the time of writing, Aug. 29, the company had not officially signified its acceptance of the award, but little, if any, doubt is entertained that it will accept.

Electric Railway Projects, Construction, Betterments, Etc.

Brandon Municipal Ry.—The financial position of this railway is being considered by the city council. Up to the present the railway has barely earned operating expenses, and the taxpayers are being called upon to provide approximately $35,000 a year for interest, sinking fund and depreciation. A street car expert from Montreal was in the city recently discussing the situation with the railway committee. Alderman Curran, chairman of the committee, in an interview expressed the opinion that the city should develop the 50 acres given to it by the Dominion Government some years ago as a public amusement park and extend the car line there. Such an extension would not be a very expensive piece of construction, and would provide accommodation for the asylum, the experimental farm, the golf links and the Indian industrial school. There are other points in the vicinity of the city which might be developed if the car line was extended to them. It is expected that the committee will report on the whole matter to the council at an early date. (Oct. 1916, pg. 421.)

British Columbia Electric Ry.—Plans are being considered in North Vancouver, B.C., for the laying of rails on the east side of the ferry wharf in order to take care of increasing traffic. The work would be done by the municipalities owning the ferry. (Aug., pg. 324.)

Calgary Municipal Ry.—We are officially advised that about half a mile of temporary track is being laid to the site of the new reservoir, to haul gravel and other construction supplies. T. H. McCauley is Superintendent, Calgary, Alta. (Dec., 1916, pg. 502.)

Lake Erie and Northern Ry.—The Mayor of Brantford, Ont., wrote the company's management, Aug. 7, asking the carrying out of the Board of Railway Commissioners' order for the widening of Water St., Brantford. (Aug., pg. 324.)

London & Port Stanley Ry.—An agreement between the London Railway Commission and Beatty Bros., for the construction of a siding to the latter's factory has been approved by the City Council of London, Ont. The agreement provides that the firm is to pay for the work, including grading and ballast; the commission to pay for ties and poles and interest at 6% on the permanent materials with money advanced by the city and to be repaid by the commission from freight and operation charges. The sum to be advanced by the city will amount to $3,435.37 and includes $1,100 for ties and poles and $2,200 approximately for rails and other non-perishable materials. Beatty Bros. will deposit with the commission $1,719, the estimated cost of the work. The siding may be removed by the commission on two months notice by either party and the ownership of the material will remain vested in the commission.

The London Board of Control has authorized the taking up of the siding on Bathurst St., between Wellington and Waterloo Streets. (June, pg. 243.)

London & Lake Erie Ry. and Transportation Co.—Negotiations are reported to have been resumed with the St. Thomas, Ont., City Council, by representatives of the company with a view to the sale of that portion of the line from St. Thomas to Port Stanley. It is claimed that if this piece of line was owned by the city, it would be possible to make the city line, which is owned by the municipality, a paying concern. (Sept. 1916, pg. 378.)

Niagara, St. Catharines & Toronto Ry.—In connection with the erection of a new passenger station by the G.T.R. in St. Catharines, Ont., the N., St. C. & T. Ry. will extend its tracks over the new Burgoyne bridge, across the old Welland Canal. (May, 1916, pg. 200.)

Port Arthur Civic Ry.—The Port Arthur, Ont., Public Utilities Commission has under consideration tenders for supplying the materials and for the erection of timber bridges across McIntyre River, to replace existing bridges which are not considered safe. The new bridges are to be built of timber because it is thought that it may be desirable to divert the street railway track to May St., in the near future. (Aug., pg. 324.)

Sandwich, Windsor and Amberstburg Ry.—We are officially advised that the company is moving about 0.75 mile of track from the side to the centre of the streets in Amherstburg, Ont. The work includes new concrete paving. The company has just completed an addition to its power house in Windsor, Ont., in which is installed a low pressure turbine, 450 k.w. (July, pg. 286.)

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William J. Lynch,
General Manager, Quebec Railway, Light, Heat and Power Co.

Winnipeg Electric Ry.—We are officially advised that the company is building a Y at the end of the run at East Kildonan, Man., for turning cars, and that it is also building a small office and men's room at Fort Rouge, Winnipeg. (July, pg. 286.)

Electric Heating for Calgary Cars.—The Calgary Municipal Ry. is arranging to heat its cars by electricity. It is contended to use electricity only in the early mornings and the cool evenings in the autumn, and to augment the coal stoves during the very cold weather in winter. Electric heaters were too expensive when the railway had to pay 2c per kilowatt hour for power, but now when the city is producing power at ¾c per kilowatt hour they can be used with advantage.

Mainly About Electric Railway People.

B. Sharpe has been appointed Assistant Roadmaster, Toronto Suburban Ry., Toronto.

D. Kinsman, heretofore Roadmaster, Toronto Suburban Ry., Toronto, has been appointed Timekeeper.

Frank Lindsay, heretofore Inspector, Toronto Suburban Ry., Toronto, has been appointed Roadmaster.

Jno W. Walker has been appointed Superintendent of Rolling Stock and Substations, Toronto Suburban Ry., Toronto.

James D. Fraser, Secretary-Treasurer and Director, Ottawa Electric Ry., went up the Gatineau River in August on a fishing trip.

G. W. Lang, acting Superintendent, Ottawa Electric Ry., has returned to duty after being absent for several weeks on account of ill health.

E. N. Horsey, Resident Engineer in charge of maintenance of way, city and suburban lines, British Columbia Electric Ry., Victoria, B.C., has been elected an associate member of the Canadian Society of Civil Engineers.

Robt. Gilbert, Purchasing Agent, Toronto Suburban Ry., who was a lieutenant in the 255th Battalion, Queen's Own Rifles, Toronto, during its recruiting and training before going overseas, has returned to his business duties.

William James Lynch, whose appointment as General Manager, Quebec Ry., Light, Heat and Power Co., Quebec, Que., was announced in our last issue, was born there, Jan. 17, 1882, not in June as then mentioned. He has held the following positions: Sept. 1897 to 1900, clerk, Montmorency Electric Power Co., and on the absorption of that company by the Quebec Ry. Light and Power Co., in 1900, was appointed cashier, holding that position until 1905; 1905 to 1907, Accountant; 1907 to 1909, Treasurer, Quebec Ry. Light and Power Co.; 1909 to July 18, 1917, Treasurer and Comptroller, Quebec Ry. Light, Heat and Power Co., all at Quebec, Que.

Increased Fares in Twin Cities.—The increased fares, details of which were given in Canadian Railway and Marine World for August, were put in force on the municipal railways in Fort William and Port Arthur, Ont., and on the interurban line connecting the two cities on July 25. The Port Arthur Chronicle says: "For the first time since the Port Arthur-Fort William St. Ry. was built nearly 25 years ago, an inter-city ride costs more than 5c. . . . However, the innovation of collecting a double fare at the boundary proved less troublesome than anticipated. The street railway management had posted extra conductors at the dividing line and they boarded each car, assisting the regular conductors to collect the second fare. As the public becomes accustomed to the new idea the extra help at the boundary will be dispensed with. There was little delay in collecting the fares, so that the schedule was not interfered with. The wait at the boundary was while Fort William men collected fares on cars going into that city and Port Arthur men on cars coming to this city. The plan is that conductors shall as heretofore change boxes at the boundary so that each city will get the fares collected therein.

Toronto Railway Overcrowding Judgment.

It was announced in our last issue that the Imperial Privy Council had allowed the appeal of the Toronto Ry. against a conviction at Toronto for overcrowding its cars, thereby maintaining a public nuisance. The judgment stated that the wrong done was a civil one, and consideration of the arguments disposed of the point as to the competency of the appeal, and in the Judicial Committee's opinion, the demurrer should have been allowed. The judgment continues as follows:

"The obligation of the appellants was a contractual obligation to the corporation. There was no duty to the public generally. These cars were on the street in recognition of a public right which the Ontario Legislature and the Toronto corporation have thought it advantageous to interfere with. The cars were not less thereby the property of the appellants, which the public could only enter by invitation. Whatever conditions in the grant of the appellants' title the corporation had contracted for, obtained merely between them and the appellants. The overcrowding was not a matter that affected the public as such, but only those members of the public who have obtained from the appellants licenses to enter the cars. This being, in their lordships' opinion, the conclusion to which the Court of Appeal ought to have come, it follows the demurrer should have been allowed and acquittal directed. Their lordships will, therefore, advise the appeal ought to be allowed, and the judgment of the Ontario Supreme Court set aside, and the matter remitted to the Supreme Court so that a verdict of acquittal may be pronounced in favor of the appellants. The respondents should pay the appellants' cost, and those of the proceedings in court of first instance should be left to the discretion of the court. The Attorney-General will neither receive nor pay costs."

Thus, therefore, ends a case which has, in various phases, served as campaign material in Toronto municipal elections for several years, and which, for waste of public time and money and general contumacy on the part of the prosecution, has not often been equalled. Comments by the Toronto press show that the judgment is taken generally as a condonation of overcrowding, but this is not the case. The company was charged with maintaining a public nuisance by overcrowding its cars, and a conviction was obtained, notwithstanding arguments for the defence, which, while admitting the overcrowding, clearly showed that, in law, it was not maintaining a public nuisance. This view has been upheld by the Privy Council.

Cape Breton Electric Co.'s Employes.—A conciliation board appointed to enquire into alleged grievances of Cape Breton Electric Co.'s employes, consists of Judge Chisholm, Chairman; Finlay McDonald, K.C., for the company, and D. A. Cameron, K.C., for the employes. It is stated that the chief point at issue is the discharge of three employes, two of whom the company has taken back, but refuses to re-employ the third. E. L. Milliken, General Manager, is reported to have stated that he is willing to meet employes, individually or collectively, to discuss all matters relating to employment or any grievance that they may have, but he declines to deal with any delegation of the Street Railwaymen's Union or persons not in the company's employ.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.—

	June, '17	June, '16	6 mths. to June 30,'17	6 mths. to June 30,'16
Gross	$37,078.16	$30,946.37	$211,961.71	$179,384.47
Exp.	26,424.14	19,045.03	136,877.47	115.087.11
Net	10,654.02	11,901.34	75,084.24	64,297.36

Calgary Municipal Ry.:

Earnings for June	$47,528.13
Operating expenses and fixed charges..	45,831.92
Surplus	$1,696.21

Cape Breton Electric Co.—

	June, '17	June, '16	12 mths. to June 30,'17	12 mths. to June 30.'16
Gross	$373,029	$400,814	$5,325,756	$5,063,114
Expen's	351,784	344,415	4,262,381	4,209,332
Net	21,245	56,399	1,063,375	853,782

Edmonton Municipal Ry.—The six months ended June 30 show a surplus, over operation and maintenance, of $42,488.04.

Hamilton St. Ry.—The City Treasurer of Hamilton, Ont., has received $14,680.24 from the company, being the city's percentage of earnings for the quarter ended June 30. The total receipts were $183,-503.03, compared with $175,926.84 for the corresponding three months of 1916.

London & Port Stanley Ry.—The Ontario Legislature has authorized the London City Council to borrow upon debentures $100,000 for the London Railway Commission, and another $100,000 to build a grain elevator at Port Stanley for use in connection with the London & Port Stanley Ry.

The Three Rivers Traction Co., which is a subsidiary of the Shawinigan Water & Power Co., held its annual meeting in Montreal, Aug. 22. The results of operation for the past year were encouraging, showing a slight surplus, and if conditions had been normal would undoubtedly have been still more satisfactory. The steam railway companies are not running the usual excursions this year, owing to war exigencies, and consequently the Three Rivers Co. did not get the pilgrimage business expected but which will undoubtedly be revived when conditions become normal again.

Toronto Civic Ry.—Receipts for July, $23,262.63; passengers carried, 1,280,801, against $19,812.72 receipts, and 1,169,411 passengers carried in July 1916.

Toronto Railway:

	1917	City percentage	1916	City percentage
Jan.	$510,053	$76,508	$473,784	$69,847
Feb.	473,184	70,976	470,704	70,614
Mar.	531,080	105,857	518,555	97,237
Apr.	510,334	102,066	496,172	99,234
May	510,870	102,174	500,515	100,103
June	499,732	99,946	467,086	93,417
July	467,382	93,476	469,846	93,969
	$3,502,635	$651,003	$4,396,662	$624,421

Toronto Ry., Toronto & York Radial Ry. and allied companies.——

	June, '17	June, '16	6 mths. to June 30,'17	6 mths. to June 30.'16
Gross	$984,529	$884,491	$5,873,584	$5,335,199
Expen's	509,121	436,635	3,054,414	2,735,760
Net	475,408	447,856	2,819,170	2,599,439

Winnipeg Electric Ry.:

	June, '17	June, '16	6 mths. to June 30,'17	6 mths. to June 30.'16
Gross	$254,226	$254,686	$1,673,370	$1,701,474
Expen's	204,562	167,115	1,237,473	1,070,966
Net	49,664	87,571	435,897	630,508

The fixed charges for June were $61,-136, thus showing a deficit for the month of $11,472 in June, 1916. The net charges for six months ended June 30, were $369,605.

Calgary, Alta., City Council has authorized the sale of 2 trailer cars to the Edmonton, Dunvegan and British Columbia Ry.

Electric Railway Notes.

The London St. Ry, has been authorized by the Ontario Legislature to operate its cars on Sundays in London Tp., between the north limits of the city and Brough's bridge.

The Brantford & Hamilton Ry. has been ordered by the Board of Railway Commissioners to erect a shelter at the Mountain Sanitorium, Hamilton, by Oct. 15.

The Quebec Ry. Light and Power Co. is building in its shops at Ste. Anne de Beaupre, 2 of the 650 class p.a.y.e., closed double truck cars, 40 ft. long overall. They will be numbered 656 and 657.

The Edmonton, Alta., City Council on Aug. 14 referred the municipal railway men's application for increased pay to the Utilities Commission. The men ask for a 20% increase all round, with 55c an hour for men operating one-man-cars, and an 8-hour day with a shift of 6 hours.

The Ontario West Shore Ry.'s rails have been sold to the Hydro Electric Power Commission of Ontario, and have been shipped to the Niagara Peninsula for use on the construction railway being built in connection with the commission's power development project at Chippewa Creek.

The Winnipeg Jitney Drivers' Association met Aug. 14, to discuss the bond question, and adjourned to meet again. The association offered a general bond by the association, but the city council desires bonds for every driver issued by an insurance company.

The Toronto & York Radial Ry. has filed a claim against the City of Toronto for damages to its property by the lowering of the grade of Yonge St. near Farnham Ave. The amount claimed is $102,811 as follows:—Damages to land and depreciation of building, $70,000; damages to 50 ft. on Yonge St., $32,000; damages to railway track, $811.

The Edmonton Radial Ry.'s agreement with its employes terminated Aug. 31. They notified the City Clerk, July 30, that they were willing to extend the agreement for another year on an increase of 20% over and above the present rate of wages, with 55c an hour for operating one-man cars; an 8 hour day and that no shift shall be longer than 6 hours without relief.

The Hamilton St. Ry. has made a contract with the Post Office Department to carry postmen on its cars for four years for the following amounts: 1st year, $3,500; 2nd year, $3,550; 3rd year, $3,600; 4th year, $3,650. There are said to be about 70 active postmen in Hamilton at present so that the rate for the first year averages about $50 a man. The contract is retroactive to Oct. 1, 1916.

Moncton, N.B., City Council appointed a special committee, Aug. 7, to take up with the Moncton Tramways, Electricity and Gas Co., the question of noise made by the street cars. It was asserted at the meeting that the noise was "due to old and defective machinery and cars," and that "it would be more practicable to make the company move the tracks in the vicinity of the hospital than to keep the cars in repair."

Application was made to a British Columbia court, Aug. 9, for a mandamus to compel the Vancouver City Council to restore the license of a jitney driver which had been cancelled May 17 because he would not keep on a specific route as required by the bylaw. The case was

adjourned to enable counsel for the jitney driver an opportunity to show that a mandamus was the proper way to obtain relief.

The London and Port Stanley Ry. has placed in service one of the two new cars which were ordered from Newark, Ohio, in Nov. 1916. They are 71 ft. 7 ins. long over all, and are arranged with seating capacity for 72 passengers. The weight of the car body, including heat equipment, seats, light foundations, brake, draft gear and supports ready for the installation of the control equipment and air brakes, is about 49,733 lb., and the car complete with full equipment, weighs about 102,459 lb. The electrical equipment was supplied by Canadian General Electric Co., Toronto.

Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co. has opened offices at Manoir Richelieu, Pointe au Pic and Valcartier Camp, Que., and Bala Park, Ont.; and has closed its offices at Carrot Creek, Jasper and Tollerton, Alta.

The Board of Railway Commissioners on application of the Marconi Wireless Telegraph Co. of Canada, has ordered that the proposed cancellation of the requirement of a minimum toll as for 10 words, the address and signature counted, on messages between ship and shore, be approved, and added to the company's tariff C.R.C. 7.

The Great North Western Telegraph Co. has appointed F. H. Markey, K.C., Montreal, as its representative on a board of conciliation to be formed to discuss a revised schedule for its employes. David Campbell, Winnipeg, has been appointed to represent the employes and Judge Gunn of Ottawa has been appointed as Chairman by the Minister of Labor.

The Minister of Marine, in the House of Commons, Aug. 6, confirmed the report that wireless telegraph services between Canada, the United States and Great Britain, had been suspended for the present. No reason for the suspension was given, but it is reported that messages were being intercepted, and that the enemy was benefitting.

The C.P.R. has arrived at an agreement with the Commercial Telegraphers Union regarding a revision of wages, etc., for its telegraph employes. The company grants a revised wage scale, including the Morkrums, and the right to legislate for all telegraph employes, and an 8½ hr. day and 7 hr. night on all tricks starting at, or later than 8 p.m., with a 10 hr. day, including 1 hr. for lunch, at one-man offices. It also grants a minimum increase of $5 a month for each Morse telegrapher, and a rearrangement of percentages as follows: Vancouver, Calgary, Moose Jaw, and Winnipeg, each 30% at $105, 30% at $100, 30% at $95 and 10% optional; Toronto and Montreal, each 30% at $95, 30% at $90, 20% at $85 and 20% optional. The operators now receiving the maximum at these points, are increased $5 a month over the fixed maximum, that is $110 in the west and $100 in the east. A $60 minimum is fixed for Morkrum operators, $65 after 6 months and $70 after a year of service. Vacations will be granted to all employes who have been in the service 3 years or more, instead of 4 years as hitherto.

In the matter of the application to the Board of Railway Commissioners by the Great North Western Telegraph Co., the C.P.R., and the Grand Trunk Pacific Telegraph Co., for an order approving conditions on telegraph forms on which messages to be transmitted are written, on hearing evidence by representatives of the applicant companies, Canadian Manufacturers Association, the Toronto, Montreal and Winnipeg Boards of Trade, the Winnipeg Grain Exchange and the Canadian Freight Association, and upon reading written submissions, the board has ordered that the application be dismissed, but that leave be reserved to the applicant companies to apply for a stated case for the opinion of the Supreme Court of Canada upon the questions of law involved. The changes which the companies desire to have made would make the same conditions prevail between the telegraph company and the addressee of a message, as exist between the company and the sender, and also that the same conditions should prevail in the transmission of a message over connecting lines, as between the sender and addressee and the company originally receiving the message for transmission. The companies also desire to limit the liability for damages in the case of repeated telegrams, to $200. At present the liability is limited to 50 times the amount received for sending and repeating. To those conversant with English law on this point, the application for such a change seems unnecessary, as it has been finally settled, under English law, that the addressee has no right of action, and this law is applicable in all provinces of Canada except Quebec. It is chiefly to meet the possibility of some such action in Quebec, that the application is made.

Among the Express Companies.

T. W. Harrison has been appointed agent, Foreign Department, Adams Ex. Co., Montreal, vice G. C. Kaestner.

The Board of Railway Commissioners has approved the Central Canada Ex. Co.'s bylaw authorizing C. Dowling, General Superintendent, to issue tariffs.

The Board of Railway Commissioners, on the application of the Express Traffic Association of Canada, has rescinded order 22,200, July 11, 1914, requiring that packages containing celluloid be conspicuously labelled "Celluloid, inflammable."

The Manitoba Public Utilities Commission has ordered the Winnipeg Electric Ry to route every alternate car leaving St. Boniface for Dufferin Ave. so that instead of turning off at Dufferin Ave. it shall proceed continuously along Main St. to Redwood Ave., and thence along Hespeler Ave and Kelvin St. to a Y which is to be installed near the John Black memorial church, returning over the same route to St. Boniface, maintaining a 10-minute service to the Y. A 22-minute service is to be maintained between the new Y and the north end of the line. The present schedule of fares is to be continued. This is the result of an application by East Kildonan residents for reduced fares and better service. The order went into effect Aug. 13.

Taxation of Public Utilities.—At a conference of Saskatchewan municipal officers at Regina, Aug. 3, a suggestion was made that public utilities operated by municipalities should be taxed in the vately. The conference was held in consame manner as if they were owned prinnection with an investigation into taxation within the province at the provincial government's instance.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.
Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.
Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.
Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.
Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each
Dominion Marine Association—F. King, Counsel, Kingston, Ont.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
month, 8.30 p.m., except June, July and August.
Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.
Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.
Express Traffic Association of Canada—C. N. Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.
Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.
International Water Lines Passenger Association—M. R. Nelson, New York.
Niagara Frontier Summer Rate Committee—James Morrison, Montreal.
Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.
Quebec Transportation Club—A. F. Dion, Quebec.
Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.
Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.
Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.
Transportation Club of Vancouver—H. W. Schofield, 553 Church Street, Vancouver, B.C.
Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.
Western Canada Railway Club—Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.
Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

Sailor's Compensation Case. — The Montreal Transportation Co. has been ordered to pay $287.45, and an annuity of $230.33, representing half of the reduction in earning power, to an employe on the s.s. Indian, who was struck by a flying cable in the course of his work at Montreal. The company claimed that as the employe was engaged at Kingston, Ontario law should apply, but it was held that the accident occurred in Montreal, and therefore came under the Quebec laws, under which, it is not necessary for the employe to prove fault or neglect on the employer's part.

The British Corporation Registry, Glasgow, Scotland, in view of the amount of shipbuilding being carried on throughout Canada for British register, has established a branch in Toronto. The work has hitherto been carried on at Toronto by Capt. J. B. Foote, Manager of the Marine Department, Toronto Insurance and Vessel Agency, and under the new arrangement, he will have associated with him, D. Arnott and P. R. Court, naval architects and surveyors, who have arrived from Great Britain.

The Bellerive Towing Co., Ltd., has been incorporated under the Quebec Companies Act, with $20,000 capital and office at Three Rivers, to carry on a general towing and transfer business there, as a subsidiary of the Wayagamack Pulp and Paper Co. The following are the officers, etc., C. R. Whitehead, Three Rivers, President; A. Pringle, Montreal, Vice President; J. W. Pyke, Montreal, director; and C. S. Smith, Three Rivers, Secretary-Treasurer.

Marine Department

Freight Steamship Orleans for France Launched at Toronto.

The s.s. Orleans was launched at the Thor Iron Works, Toronto, Aug. 1, the christening ceremony being performed by Mrs. Stuart Playfair, Toronto. The vessel was originally ordered by James Playfair, President, Great Lakes Transportation Co., Midland, Ont., for his company, and was subsequently transferred to the Oriental Navigation Co., Nantes, France.

The hull is of the following principal dimensions: Length over all, 261 ft.; length between perpendiculars, 251 ft.; breadth moulded, 43½ ft.; depth moulded, 28 ft. 2 in. It is of the single deck type, with poop bridge and forecastle, steel deck house on bridge, and deck and chart room on top of deck houses, with navigating bridge. The hull is built on the transverse system, with the propelling machiner yamidships, with the coal bunkers in wings. Theer are two cargo holds, with two hatches to each, one hold extending from the collision bulkhead to the boiler room bulkhead, and the other rudder is of the single plate type, with arms alternately on the port and starboard side. The hull is divided by 4 watertight bulkheads, and a watertight sliding door is fitted in the engine room bulkhead, to give access to he tunnel. There is a screen bulkhead between the boiler and engine rooms, with door and portable plate for drawing the condenser tubes. The engine foundation is built up of plate and angles, with girders under the foundation, to line up with the fore and aft girders on the water bottom. The boiler foundations are of longitudinal plate girders, with large bouble angles on top edge, and connected to tank top with double angles at bottom. The deck house on the bridge is of steel, 7 ft. high, of plating, 12.2, stiffened with 3 x 3 x 6.1 angles, as are also the engine and boiler castings. The flying bridge is built from the roof of the chart house to the ship's sides, and is 4 ft. wide, carried on angle iron framing supported on angle iron stanchions. Steam windlass is 8 x 8 in.,

The Steamship Orleans, launched at Toronto recently.

from the engine room bulkhead to the after peak bulkhead, and there is a water bottom, 3 ft. deep, from the collision bulkhead to the after peak bulkhead. The construction is for the highest class of British Lloyd's ocean service, and in accordance with the British Board of Trade's requirements. The size of the machinery space has been arranged to approximate 13% of the gross tonnage, thus attaining a reduction of 32% from capacit ytonnage.

The hull is built with flat plate keel and bilge keels, the latter extending for about 100 ft. amidships, and are of plate 9 in. deep, connected to the shell with angle bars fitted on short lengths, extending from butt to button shell, the plate being continuous. She has a straight stem and elliptic stern. Channel frames are fitted and extend from tank margin to main deck, and alternately to bridge deck, without hold stringers or 'tween deck beams. Plate floors are fitted on every third frame, except in engine and boiler space and forward, of 3/5s length, which are 24 in. centres. The propeller frame is according to Lloyd's requirements, with rudder post extending to main deck, to which it is attached by angles and deep transom plates. The fitted with hand attachment and friction brakes. The steam steering engine, 6 x 6 in., is placed in the after end of the engine casings, with the horizontal shaft protruding through the after side, with the bracket and chain drum on deck. Two 22 ft. lifeboats, and one 18 ft. working boat, are to be provided, together with life belts and life buoys as required by law. The bridge deck will provide accommodation for the captain's, first and second officers' quarters, which, with the accommodation for the crew, are to be complete with every modern convenience. The electrical installation will include one 7½ k.w. generator, with equipment for lighting the whole vessel, the sidelights to be fitted for electric light as well as for oil.

The propelling machinery, which is being built by John Inglis & Co., Toronto, consists of engines of the single screw, 3 cylinder, 3 crank type, with cylinders 20, 33½ and 55 in. diam. by 40 in. stroke, developing about 1,400 i.h.p. at 80 r.p.m. Steam will be supplied by 2 boilers, each 14 ft. diam. by 12 ft. long, built for natural draught, at 185 lb. pressure. The boilers will be equipped with corrugated furnaces, 42 in. inside diam., with separate combustion chamber for each furnace. It is expected that the vessel will be completed and ready for service before the winter.

Canadian and United States Coasting Regulations.

Canadian Railway and Marine World for August contained a copy of the order in council permitting United States vessels to engage in the coasting trade on the Great Lakes, so long as a similar regulation by the U. S. authorities as regards Canadian vessels in U. S. waters, shall remain in force. The U. S. Shipping board has submitted a resolution to Congress for approval along these lines, and in commenting on this, the Secretary of Commerce said: "The chief purpose of the resolution is to allow Canadian vessels on the Great Lakes to do coastwise business between U. S. ports. The Canadian Government very handsomely acted on the matter some time since, as concerns us, allowing the coastwise privilege to U. S. vessels in Canadian ports. There is urgent necessity for the employment of all possible tonnage on the Great Lakes in coal and iron ore hauling. The stocks of coal at lake distributing points are thousands of tons short of what they should be, so it is important to get every possible bottom carrying coal to the northwestern points before navigation is stopped. The unprecedented demand for iron and iron ore makes the need for additional ore carriers acute, almost as much so as for more coal carriers. There are numerous Canadian vessels that will engage in this trade if the restrictions are removed during the war emergency."

Stranding of the s.s. Clematis Investigated.

An enquiry was held at Halifax, N.S., July 12, into the cause of the stranding of the British s.s. Clematis, near Red Cape, Framboise, N.S., June 16, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Commander E. Wyatt, R.N.R., and Capt. T. A. Hill, master of R.M.S. Chaleur, as nautical assessors.

The court found that the master was foolhardy in his navigation, when he found himself in shallow water, and it also wondered how it was possible for the master being unable to differentiate between a fog horn of the power of the one at Scatarie and one blown by a vessel. The weather was foggy, but calm, and the court considered that too great a speed was maintained during such weather. It therefore found him in default, not for negligent navigation, as his deviation book shows that some painstaking efforts were made to bring the vessel safely to her destination, but he erred greatly in judgment, in not taking means to assure himself of the nature of the fog horn he heard, and he committed a fatal mistake in maintaining the good half speed while such climatic conditions existed. Having regard to the circumstances, and to the fact that his navigational work previous to this was faultless, the court did not deal with his certificate, but reprimanded him severely, and trusts that it will serve as a lesson to exercise more prudence in future. It did not appear that the officers were negligent, and they were exonerated from blame.

Encouragement of Shipbuilding in Nova Scotia.

Some details of the Nova Scotia legislation to encourage shipbuilding there have already been given in Canadian Railway and Marine World. Under the act passed last session, the Governor in council is authorized to appoint five, and not more than seven persons to form a shipbuilding commission, together with a secretary, all of whom may be remunerated. The commission's duties are to investigate the province's facilities for vessel building and for the carrying on of other manufacturing incidental thereto, to make suggestions for regulations for the use of all resources for such development, and for such purposes to engage technical and expert assistance and enter into arrangements with similar commissions in other provinces, or with the Dominion Government. The Governor in council may create the commission a body corporate under the name of the Nova Scotia Ship Building Commission, with all the rights and powers of a corporation, so that it may build, purchase, and operate vessels, establish shipbuilding plants, and generally carry on business as usual with an incorporated company. It is authorized to issue bonds or other securities, expropriate lands, and raise $2,000,000 on the province's credit, etc., under order of the Governor in council. The proceeds of the loan raised are to be paid into the provincial treasury, and applied for the following purposes—payment of the commission's expenses in carrying out the objects of the act, payment of subsidies granted to the Commission, or to any company engaged in the building, equipment or operation of vessels, and payment of obligations which the commission may incur in carrying out its objects.

The following commissioners have been appointed,—D. Macgillivray, Halifax, Chairman; C. F. McIsaac, K.C., Antigonish; D. E. North, Hantsport; A. MacKenzie, River John; F. L. Kelly, North Sydney; and Murray Macneill, Halifax, Secretary.

Imperoyal-Maisonneuve Collision.

An investigation was held at Montreal, recently, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. F. Nash and C. Lapierre, as nautical assessors, into the cause of the collision between the steamships Imperoyal and Maisonneuve, near the intersection of Contrecoeur range lights (traverse), in the St. Lawrence River, June 5. The court found that the Imperoyal was being navigated with improper lights, the additional red light which was exhibited with the red side light being contrary to the regulations and therefore misleading, and also stated that it failed to find any regulations directing a vessel carrying dangerous goods to exhibit additional lights, other than those prescribed for a vessel under way. If it can be shown that there is any regulation empowering a vessel carrying dangerous goods to exhibit an additional red light when under way, the court will withdraw its conclusion of default against the master of the Imperoyal and the pilot, but until then, the master stands to be censured for a wrong action. The court considered that the master of the Maisonneuve was misled by the lights in the first instance, but had he kept a proper lookout he would have seen the masthead light, and that the vessel was moving, and he should have adopted precautionary measures, as called for by article 29. He also showed lack of elementary bravery, in abandoning his vessel without making himself acquainted with the injury sustained; the fact that three members of the crew returned to the vessel and steered her to shoal water shows conclusively that the master lost his head. He ordered the engineer to leave his post, and the engines were left full speed ahead. The Imperoyal was correctly navigated, apart from the matter of lights. The court, after weighing these facts, found that the master of the Maisonneuve, Jean Paquet, had been negligent and is not competent to command a vessel, and therefore cancelled his master's certificate 5033. The engineer of the Maisonneuve abandoned his post without first stopping the engines, but as this was done under the master's personal orders, the court could not express an opinion on the engineer's conduct.

In the course of the investigation it developed that two men and a child were on board, not members of the crew, or the owner's family, nor servants of his household, and the Maisonneuve being a freight vessel, not licensed to carry passengers, sec. 671, par. vii., chap. 113, R.S.C., was violated. The court therefore recommends that the fine mentioned in this section, viz., $100, be imposed.

Coal Supply for the Maritime Provinces.

The question of a coal supply for the Maritime Provinces was raised in the House of Commons, Aug. 2, by Hon. W. Pugsley of St. John, N.B., who asked for a definite statement as to what arrangements, if any, had been made to provide against a shortage; what steamships have been placed at the disposal of the authorities, and what are to be the rates of freight.

The Minister of Trade and Commerce, in reply referred to the appointment of a Fuel Controller, who had Dominion wide authority and who had had the question of Canada's fuel supply under consideration for over a month. An agent has been appointed in the United States to act under him, whose duty it is to report upon the supplies of coal, at what points these supplies are, the prices at which they can be obtained, and the transportation facilities available between the point of production and the Canadian border. At the time of speaking that officer was gathering information in Canada as to requirements. The Fuel Controller was in communication with the Board of Railway Commissioners and the different Canadian railway companies as to the arrangements necessary for the distribution of coal in Canada. The Minister then said:

"The anthracite situation in Halifax and St. John is somewhat different, because it is practically impossible to take coal in there by rail, and the ordinary way hitherto has been by vessel. At present facilities for water carriage are very scarce, and very difficult to obtain. It is true that the disparity of cost as regards St. John and Halifax is mainly due, not so much to different prices at the points of production, although in obtaining coal from independent companies in New York there is a difference in the prices paid as compared with prices at the point of production where the coal is taken up by the railway companies. The matter of freights comes in there. They are very high. Schooners and small vessels which take lumber from St. John and which hold themselves open to bring back freight, have their own costs and charges and they are very high. How to obtain the necessary transport is a difficult question. The Fuel Controller has appointed an aide in St. John and another in Halifax. The appointee in St. John, Mr. Frink, is, with committees, working upon the problem there. I am not aware that the government has any steamships that can be placed at the disposal of parties in St. John and Halifax for the carriage of this coal. I am inclined to think it has not. It is equally difficult for the government to obtain vessels for that purpose. In the main, the transport will have to be arranged, I think, by the parties interested in obtaining coal, aided as fas as they possibly can be, by the Fuel Controller and such agents as he is working in co-operation with."

The Minister of Trade and Commerce again referred to the matter, Aug. 4, when he said: "The government has intervened in the matter to the extent of arranging for the necessary transport for supplying hard coal to Halifax and St. John and the districts supplied therefrom. The difficulty appears to be the finding of suitable accommodation for these vessels, which are of large size, and have to be unloaded quickly to avoid unnecessary expense. This matter is being looked into by the authorities of Halifax and St. John, and it is hoped that they will be able to arrange for the docking and unloading of these vessels. If so, they will be at their disposal at reasonable rates for carrying the coal that is required to supply these two cities and the surrounding districts."

Government Naval Vessels and Dockyards.

The Minister of Marine stated in the House of Commons recently, that H.M.C.S. Rainbow is maintained in full commission, as is also the Shearwater (submarine depot ship), and the submarine flotilla. The Niobe is being utilized as a depot and receiving ship, and a large number of men have passed through her, in addition to her regular complement and drafts for patrol vessels. The naval dockyards at Halifax, N.S., and Esquimalt, B.C., have been worked to their full capacity, the nature of the work done being practically all repairs. Halifax is being used as the base for vessels of the North Atlantic fleet, which has been strengthened lately. At Esquimalt yard, work has been carried out on Imperial vessels as well as on those of the Canadian service. The floating dock at Prince Rupert has been completed, but it has not been operated for the use of the mercantile marine. It has proved very useful in connection with the repairing of Royal Navy ships. In addition to repairs to vessels of the fighting fleet, the docks are carrying out a large number of small repairs to vessels employed for auxiliary purposes, patrol and other defensive work on the coasts.

War Profits on Shipping.—The Chuyetsu Steamship Co., a comparatively small Japanese steamship concern, which had one of its vessels sunk by a German submarine recently, decided to sell its vessels and retire from business. In the liquidation, stockholders, who paid $2.50 a share originally, received $500 a share.

Shipbuilding Activities Throughout Canada.

Steel Steamship Building for British Government.

The Port Arthur Shipbuilding Co. launched the s.s. War Fish at its yards at Port Arthur, Ont., Aug. 4. This is the second vessel launched this summer. It is 251 ft. long over all, 43½ ft. beam and 28 ft. 2 in. deep, and of 4,200 tons capacity. The keel has been laid for another similar vessel. Keels have also been laid for a number of trawlers.

The s.s. War Dog, which was built at the Wallace Shipyards, North Vancouver, recently, and described and illustrated in Canadian Railway and Marine World for June, underwent her trials at the end of July. She was built for an average speed of 9½ knots an hour, and in her trials reached 10.4 knots, with an average of 10.2 knots. The test runs were between Point Atkinson and the Hollyburn wharf, a measured course of 4.12 nautical miles. In the three tests, the engines developed 1,260 h.p. at 98 r.p.m.; 1,155 h.p. at 80 r.p.m., and 1,305 h.p. at 98 r.p.m., respectively. The tests of this vessel, the first steel steamship to be built in British Columbia, are considered most satisfactory. When she leaves for England shortly, she will be in charge of Capt. J. H. Kay, with J. Black and T. Thom, all of Liverpool, Eng., as first officer and chief engineer respectively.

S.S. War Fish, launched at Port Arthur, Ont., August, 1917.

The s.s. War Fish, the seventeenth vessel built at the Port Arthur Shipbuilding Co.'s yards at Port Arthur, Ont., was launched there Aug. 4. She was built to the order of James Playfair, President and General Manager, Great Lakes Transportation Co., Midland, Ont., and has been acquired by the Imperial Munitions Board for the British Government. Her dimensions are, length 261 ft., beam 43½ ft., depth 28 ft. 2 ins., and she has a gross tonnage of 2,406, with deadweight carrying capacity of 4,280 tons.

Vancouver Steamship Building.—It is stated that the British Government had taken over a number of steel steamships under construction there for Norwegian interests. It is stated that eight of these vessels are under contract, with the first vessel in the frame and partially plated. Among the information given in Canadian Railway and Marine World for August, which was as far as could then be ascertained, the Dominion Government had authorized the construction of seven steel steamships in British Columbia, on foreign account, for export, four of them to be built by Wallace Shipyards, Ltd., North Vancouver, and three by J. Coughlan & Sons, Vancouver. Of these latter, a contract was made for one vessel, and this was requisitioned by the British Government. In the former case, no contracts were entered into, but one steel vessel was built for Japanese interests, and was taken over by the British Government. This company has contracts for three steel steamships for the Imperial Munitions Board.

Wooden Steamship Building for British Government.

In response to complaints to which publicity has been given in the British Columbia press, that contracts for the building of wooden steamships have been awarded to eastern contractors, who have located their yards in the west, in preference to local yards already established, the Imperial Munitions Board has issued a statement to the effect that out of 27 wooden steamships ordered in British Columbia, two contracts covering 11 vessels, have been let to firms hitherto established in the east. Both of these firms were in negotiation with the board prior to any offer being received from British Columbia, and it was their intention to build in the east until the board stated that as a certain amount of B.C. lumber was to be used, it would be better to locate their yards in that province. Of the total number of vessels ordered by the board, three-fifths have been ordered in British Columbia, and all yards in the province, which are equipped to build vessels of the tonnage required, have received contracts except the Prince Rupert yards, where suitable timber is not available, and one other firm, which did not care to undertake wooden shipbuilding.

Cameron - Genoa Mills Shipbuilders, Ltd., Victoria, B.C., has laid the first keel of its order for 4 wooden steamships for the Imperial Munitions Board. A number of shipbuilders engaged by the Foundation Co. have been loaned to the Cameron-Genoa Shipbuilders, to rush construction as much as possible, until the Foundation Co.'s plant is advanced to the stage when it can commence actual shipbuilding. In the meantime, it is expected that the Cameron-Genoa Mills Shipbuilders will be able to release other men for the Munitions Board's orders, as the vessels under construction for Canada West Coast Navigation Co. and H. W. Brown & Co. are about completed.

The Foundation Co. has keels laid at its plant at Hope Point, Victoria, B.C., for three of the five wooden steamships, for which it has a contract from the Imperial Munitions Board. The frame has been erected on the first keel. Before the last keel is laid, a considerable quantity of filling will have to be placed on the west side of the plant.

Imperial Munitions Board.—E. H. Gurney, Second Vice President, Gurney Foundry Co., Toronto, who has been in Ottawa for some time, assisting the Imperial Munitions Board in connection with shipbuilding, has been appointed Assistant Director, Marine Machinery Supply.

The William Lyall Shipbuilding Co., Ltd., has been incorporated under the Dominion Companies Act, with $1,000,000 capital, and head office in Montreal, to carry on shipbuilding throughout the Dominion, or elsewhere, and to manufacture and deal in materials incidental thereto. The directors are, Wm. Lyall, President, P. Lyall Construction Co., Montreal, President; J. N. Greenshields, K.C., and H. W. Beauclerk. The company has acquired Wallace shipyard no. 2, from Wallace Shipyards Ltd., North Vancouver, B.C., and is making extensive additions to the plant. It has an order from the Imperial Munitions Board, for 10 wooden steamships, and is reported to have laid the first keel, which is in two sections, with a 16 ft. scarf, pinned with hard wood keys, and fastened with galvanized bolts, the ends being secured with 19 in. spikes.

The New Westminster Construction & Engineering Co., which has an order for 4 wooden steamships for the Imperial Munitions Board, laid the first keel at Poplar Island, New Westminster, B.C., July 28, and the second one, July 30. This is an entirely new plant, and no time has been lost in getting construction under way. It is stated that there is no difficulty in obtaining the necessary labor.

The North Shore Iron Works, North Vancouver, B.C., has received orders from the Imperial Munitions Board for a number of windlasses, winches, etc., for delivery by April, 1918, for wooden steamships under construction for the Board in B.C.

General Shipbuilding Notes.

The British American Shipbuilding Co., Ltd., has been incorporated under the Dominion Companies Act with $1,000,000 authorized capital and office at Toronto, to build all types of vessels and to sarry

on a general constructing and contracting business. F. H. Keefer, Thorold, Ont., and A. A. Kinghorn, Toronto, are chiefly interested.

Canada West Coast Navigation Co.—M. J. Haney, of Toronto, Chairman of the Company, who was in Vancouver, B.C., recently, is reported to have stated that the company is in the shipbuilding business to stay, and what is planned for the future might be a surprise to local concerns. The company, he said, had contributed 10 ships toward the prosperity of the province, and originally contemplated building 50, but owing to existing conditions, the company's individual plans cannot be extended for the present.

Canadian Government Wooden Steamships for Panama Route.—It was announced in our last issue, that the Dominion Government had concluded two contracts with Wallace Shipyards Ltd., and Harrison and Lamond Shipbuilders, Ltd., Vancouver, B.C., respectively, for the construction of two wooden steamships for service between Pacific and Atlantic coast ports via the Panama Canal, at an approximate price of $230,000 each. It was announced in the House of Commons, Aug. 25, that the firms had declined to proceed and had cancelled their tenders, offering instead to proceed with the work on a cost, plus 10% basis.

Concrete Vessel Building.—A syndicate has been formed in Montreal, under the name of the Atlas Construction Co., for the construction of concrete vessels, and is said to be building a steamship of reinforced concrete, 125 ft. long, 20 ft. beam and 11 ft. deep, as an experiment. Barges of concrete construction have been in limited use for special purposes for a number of years in Italy and France, and of recent years on the Welland and Panama Canals.

The Eureka Shipbuilding Co., Ltd., has been incorporated under the New Brunswick Companies Act, with $32,000 capital, and office at North Head, N.B., to build, own and operate vessels of all kinds, and to carry on the business of traders and the transportation of merchandise, mails and passengers. The incorporators are: F. Ingersoll, J. E. Gasgill, F. S. McLaughlin, F. L. Lakeman, Grand Manan, and N. M. Mills, St. Stephen.

The Montreal Dry Dock & Shipbuilding Co. has practically rebuilt its dry dock property on Mill St., Montreal, and is now able to handle any vessel which can go through the canal. The dock is now 428 ft. long and 30 ft. deep.

North Vancouver Drydock, Etc.—It is reported that negotiations are proceeding for the purchase of the site acquired by the Dominion Drydock and Shipbuilddock and shipbuilding plant at North ing Co., for the establishment of a dry Vancouver, B.C. This company originally planned a dry dock, provided a Dominion subsidy could be obtained. No doubt the subsidy would have been granted if the company had been able to finance the affair and to arrange for a dry dock of the type necessary to gain the subsidy, but so far as can be seen, the financing of the construction depended on the granting of the subsidy, so no progress was made.

Nova Scotia.—it is reported that a steel shipbuilding plant will be located at Dartmouth, N.S., under the Nova Scotia Government's scheme for aiding shipbuilding in the province.

Nova Scotia Schooner Building.—A 3-masted schooner, named Esther Adelaide, 148 ft. long, 36 ft. wide and 12.4 ft. deep, was launched at Port Greville, N.S., Aug. 8, and on the same date a schooner, named William Melbourne, 158.4 ft. long, 12.7 ft. deep, was launched at Parrsboro, N.S., for C. T. White & Son, Sussex, N.B. It is reported that both vessels have been sold to Australian parties.

The Nova Scotia Shipbuilding and Transportation Co. has commenced the construction of two 500-ton schooners at Liverpool, N.S., and is arranging to launch one similar vessel every three months as long as the demand continues. The two vessels now laid down have been sold. H. A. Frank, New York, and W. E. Hansel are chiefly concerned in the company's management.

The Ontario Gravel and Freighting Co., Windsor, Ont., had a wooden steam tug named Windsor launched from R. Morrill's yards, Collingwood, Ont., Aug. 18. Her dimensions are: length 105 ft., bread Her dimensions are, length 105 ft., breadth 23 ft., depth 12 ft. She is equipped with fore and aft compound engine, supplied with steam by a Scotch boiler 13 by 13 ft., at a working pressure of 155 lbs. On completion she will be taken to the Detroit River for towing scows and for general freight purposes.

Prince Rupert Drydock, etc.—The Liberal convention held in Winnipeg in August passed a resolution urging the Dominion Government to instal a permanent and efficient staff, and to assemble materials for the operation of the Grand Trunk Pacific drydock and shipbuilding and repair plant at Prince Rupert, so that shipbuilding and repairing may be carried on in the national interest.

The negotiations which were reported to have been in progress with the Union Iron Works, San Francisco, Cal., for the lease of the G.T.P. plant at Prince Rupert, are stated to have fallen through, though it is announced that negotiations are proceeding with other firms with some signs of success, the chief obstacle being the supply of steel for shipbuilding.

The St. John Shipbuilding Co., mention of which has been made in previous issues, is completing arrangements for commencing the building of wooden vessels at an early date. The directors include J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd.; Senator W. C. Edwards, R. M. Wolvin, President, Montreal Transportation Co., and President, Canada West Coast Navigation Co.; M. J. Haney, Chairman, Canada West Coast Navigation Co.; Angus McLean, Bathurst, N.B., Richard O'Leary, Richibucto, N.B., Thos. Bell, St. John. N.B., and Thos. Nagle, St. John, N.B., the last mentioned being the General Manager.

The St. John Shipbuilding Co., organized recently, has plans for the construction of five ways at Courtenay Bay, St. John, N.B., where it intends laying keels for five 5-masted schooners with auxiliary power. It is reported at St. John that 10 ways are to be laid down, that vessels will probably be built there for the Imperial Munitions Board, and that eventually steel vessels will be built.

The schooner Malahat was launched at the Cameron-Genoa Shipbuilders' yard, Victoria, Aug. 11. Considerable delay has been experienced in obtaining delivery of the Bolinder engines intended for this vessel, they being made in Sweden. It has, therefore, been decided that she will accomplish her first voyage as a schooner, after which, it is hoped that her engines will have arrived. The Malahat has been sold to Canada Steamship Lines, Ltd., and she is at present under charter with lumber for Australia. She was built for Malahat Motor Ship Co., a subsidiary of H. W. Brown & Co., the principal of which is General Manager of the Canada West Coast Navigation Co., and which, in turn, is closely associated with people interested in Canada Steamship Lines, Ltd.

The Steel Co. of Canada is extending its plant at Hamilton, Ont., and it is stated that in addition to manufacturing general sheet metal, it will arrange a special department for rolling steel plates for shipbuilding.

Steel Shipbuilding Probabilities.—Mark Workman, President, Dominion Steel Corporation, Montreal, is reported to have stated recently, that Canada will not be in a position to build steel steamships to any considerable extent for two or three years, owing to the scarcity of steel. He said that his company's entire output had been contracted for by the Imperial Munitions Board, up to the middle of 1918, and it was probable that the contract would run into the following year. The company is expending about $5,000,000 for extensions and improvements, but the additional resulting output is all covered by existing contracts.

Toronto Dry Dock Co., Ltd., has been incorporated under the Ontario Companies Act, with $100,000 authorized capital, and office at Toronto, to take over a dry dock, or dry docks, at Toronto, and to build, own and operate steam and other vessels. Among those interested in the company are C. S. Boone, President, and J. E. Russell, Vice President and Managing Director, Toronto Shipbuilding Co.; L. Solman, Manager, Toronto Ferry Co.; J. J. Manley and H. Dickson. The company bought a floating dry dock at Sturgeon Bay, Wis., which has been towed to Toronto and installed on the company's property on the harbor front at the foot of Cherry St. The dock is a small one, capable of handling vessels up to about 160 ft., and is more in the nature of an experiment. It is said that if there is sufficient inducement in the way of vessel repairs, etc., the company will build a modern floating dry dock to accommodate the larger type of lake vessels. The company is stated to have made application to the Dominion Government for a subsidy.

The Toronto Shipbuilding Co., Ltd., has been incorporated under the Ontario Companies Act, with $100,000 authorized capital, and office at Toronto, to build, own and operate steam and other vessels of all kinds, and to carry on a general contracting business. Following are the officers: C. S. Boone, President, Boone Dredging & Construction Co., Toronto, President; J. E. Russell, Contractor, Vice President and Managing Director; C. A. Boone, Second Vice President; J. M. Russell, Secretary; J. J. Manley, Treasurer, and C. L. Hayes, Engineer and Superintendent. A plant is being laid out on the harbor front at the foot of Cherry St., where the company will build two wooden steamships, for which it has a contract from the Imperial Munitions Board.

The s.s. Ugelstad, which was launched recently at the Port Arthur Shipbuilding Co.'s yards at Port Arthur, Ont., was completed and handed over to the Great Lakes Transportation Co., early in August. It is said that negotiations are under way for the transfer of the vessel to Norwegian interests, but it is anticipated that such transfer would not be authorized by the Dominion Government, but dently made a mistake in referring to

rather that she would be taken over for the British Government.

Wallace Shipyards, Ltd., which, as previously announced, has sold its no. 2 yards at North Vancouver, to Wm. Lyall Shipbuilding Co., does not give up actual possession until the completion of two auxiliary powered ships being built there for Canada West Coast Navigation Co., the last one, named Mabel Stewart, being launched Aug. 11.

Western Canada Shipyards Ltd. has secured a permit for the construction of an office building, etc., on the site it has acquired from the British Columbia Electric Ry., at the foot of Carroll St., Vancouver, B.C.

C. T. White & Son, Ltd., Sussex, N.B., have, it is reported, added shipbuilding to their other industries, and have laid out a yard at Alma, N.B., on the west side of the river, beyond the breakwater.

The Yarmouth Shipbuilding Co. Ltd., is reported to have leased O'Hanley's wharf formerly the Gilbert Sanderson shipyard, at Yarmouth, N.S.

British Columbia Steamboat Men's Work.

From the glacier-fed waters of the Upper Fraser River in British Columbia to the Garden of Eden is a far cry, but many of the adventurous steamboat men, scowmen and canoemen who blazed the tarils oi progress in the north and are remembered as the pioneers of navigation in central British Columbia, made the long trip to the plains of Arabia to play their part in the Empire's battles. Glowing tributes have been paid to British Columbia men so active in the Inland Water Transport Service ,and owing to the efficiency of the rivermen who have learned ,through years of experience on the Fraser and the Skeena Rivers, how best to master the problem of river transportation, special calls were sent out from Britain for more men from the Pacific province. The work on the northern rivers is similar to that on the Tigris and Euphrates, and a short period of acclimatization finds the rugged frontiersme no fthe far west at home in the land of Caliphs.

Patrol Steamship Building for British Government.

In response to questions by members as to the progress in building ships in Canada for the British Government, the supervision of which was undertaken by J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd., the Minister of Marine stated in the House of Commons, Aug. 6, that the work is progressing satisfactorily, but not as rapidly as had been hoped for. There is difficulty about getting engines and boilers, which has caused delay. A number of vessels have been launched, and it is hoped to have a number of them in patrol service in such places as the British Government desires to place them. The British Government asked the Marine Department to undertake the work, and this is being done, with the assistance of Mr. Norcross and other gentlemen. The work is being performed in a number of places in Canada. In Quebec it is being done by George Davie of Levis, in Montreal by Canadian Vickers, Limited, and in Toronto by Norcross and Polson. Work is also being done at Collingwood and Port Arthur, and other points. On the whole it is going ahead satisfactorily, but there are delays in obtaining material, and it has not proceeded as quickly as was hoped for at the time the orders were placed.

[EDITOR'S NOTE.—The Minister evi-vessels being built in Toronto by "Norcross and Polson." J. W. Norcross is acting as Director of Naval Construction, under the Naval Service Department, in connection with the building of steam trawlers and drifters. The Polson Iron Works has a contract for a number of patrol boats as well as trawlers and drifters, as referred to elsewhere, and others are being built by other concerns in Toronto as well as in other places.]

Lake Vessels for Winter Service on the Atlantic.

In Canadian Railway and Marine World for August, some mention was made regarding the suggestion of a correspondent of a Toronto daily paper, as to utilizing lake vessels for Atlantic service during the winter, when lake navigation is closed. It might betaken from the correspondent's letter that on the closing down of navigation on the Great Lakes, all the vessels are tied up until the spring. So far as Canada is concerned, especially since the commencement of the war, this is not the case. During the last two winters, a considerable number of Canadian registered lake vessels have been transferred to the coast and to Great Britain and France, under charter for any service which they may be called upon to perform. Some of these charters were for winter service only, such vessels returning to their customary service in the spring, and other charters have been for periods of from two to five years. Canadian Railway and Marine World has from time to time given details of the vessels so engaged.

There are still a number of vessels which might engage in this service with advantage, but it must be understood that all vessels operating on the Great Lakes are not suitable for salt water service, and also that there are several vessels which would have to be cut in two and towed through the canals, and pieced together again before taking up the ocean service. A great many of the lake vessels have been built in Great Britain, and so have had some Atlantic experience, but there is very little doubt that vessels of the customary lake type, with propelling machinery located in the stern, are not suitable for continuous service in trans-Atlantic trade. This conclusion is not derogatory to the type or construction of the vessels. They are originally designed and built for lake service, and fulfil their duties in that service, but the type is not of the kind adapted to ocean service.

Several U.S. shipping companies are considering the question of sending some of their vessels to the coast for coast service during the winter, and consider that they could be used to advantage on the east coast between November and April. The cost of refitting the vessels for salt water service is mentioned as about $5 per horsepower, and it is believed that with some government backing, the plan is feasible. It is hoped to get the government to pay the initial cost of changing the equipment, the owners to repay the amounts out of the profits of the winter business.

Press reports state that arrangements are being made in the United States to select about 80 vessels, which are deemed suitable for ocean and coast service, and take them through the Welland and St. Lawrence canals. Those which are too long for passage through the Welland Canal will be cut in two and joined, possibly at Montreal. It is also reported that a Canadian Government representative has classified a number of Canadian vessels suitable for ocean service, and it is stated that all vessels which can pass the Welland Canal, and are deemed suitable for the service, will be taken. These number about 100, and are additional to those Canadian Lake vessels which have been in such service from the commencement of the war.

Enquiry into Triple Strandings of Steamship Turbinia.

Capt. L. A. Demers, Dominion Wreck Commissoiner, assisted by Capts. J. B. Foote and Jas. McMaugh, as nautical assessors, held an enquiry at Toronto recently, into the causes which led to the stranding of Canada Steamship Lines s.s. Turbinia in the Niagara River, June 30, on Centre Island, Toronto, July 1, and in Toronto harbor, July 5. The court found that the grounding in the Niagara River, between Queenston and Lewiston, was due to an error of judgment on the part of the master, A. Jeffreys, in miscalculating the force of the current and wind, but that it was not of a culpable nature. Regarding the second grounding, the court considered that the master did not apply his judgment in the proper channel; he had expressed his doubts as to the correctness of the compass but did not take means to ascertain its deviation; he was running at too great a speed during fog, and did not use the lead as he should have done. He bears a good reputation as an officer, and for this reason the court dealt leniently with him and suspended his certificate for one month from July 20. The court absolved the mate, M. J. Lawless, from blame for the stranding, but remarked that his conduct indicated indifference. With respect to the third grounding, the evidence was not very clear, as the master stated that a number of small boats were almost blocking the channel, and in endeavoring to clear them he grounded. The wheelman and second officer said that they saw no boats. The court found that he was not in fault in this case, but warned him to be more careful in future and not to lose sight of his responsibilities as a master.

The Federal Shipbuilding Co., associated with the United States Steel Corporation, is credited with the intention of building the largest shipbuilding plant in the world at New York. It is said that 10 shipways are to be established, each about 500 ft. long, which will probably be extended to take vessels 1,000 ft. long, later in, that the steel buildings, which are planned to cover 10 acres, will include a plate mill, structural steel, fabricating and assembling shops, all the equipment is to be made in the plant, and that a large basin, 1,000 by 220 ft. is being dredged, large enough to enable six vessels to be fitted out simultaneously. The plant is being modelled on plans adopted by the most modern yards in Scotland.

The Oriental Navigation Co. of Nantes, France, which has acquired the s.s. Orleans, now under construction at Toronto, from the Great Lakes Transportation Co., is reported to have also bought the s.s. Turert Crown from the Coastwise Steamship and Barge Co., Vancouver, B.C. The Turret Crown, which was formerly operated on the Great Lakes, has latterly been in the ore trade between Granby Bay and Puget Sound.

Atlantic and Pacific Ocean Marine.

A derelict vessel about 220 ft. long, floating keel upward in the North Atlantic, was reported recently by the s.s. Rounton Grange, as a menace to navigation.

The Blue Funnel Line will resume its trans-Pacific service about the end of this year. It was interrupted owing to a number of the vessels being commandeered for war work.

The British s.s. Heliopolis, formerly Maine, is reported to have been purchased by Canadian Pacific Ocean Services, Ltd., and renamed Methven. She was built at Glasgow, Scotland, in 1906, and is 4,852 tons gross, 3,042 register.

Maritime Provinces and Newfoundland.

The Public Works Department received tenders, Aug. 31, for extensions and repairs to Negro Point breakwater, St. John harbor, N.B.

The Eastern Steamship Corporation is not operating its usual direct service between St. John, N.B., and Boston, Mass., this year, but is continuing its service on its International Division, to St. John, via Portland, Me.

The Dominion Iron and Steel Co.'s s.s. Heathcote was sunk in a collision with a Dutch steamship in the St. Lawrence, toward the end of July, while carrying a cargo of limestone to Sydney, N.S. She was built at Sunderland, Eng., in 1888, and was 2,345 tons gross.

The British s.s. Clematis, which stranded near Red Cape, Framboise, N.S., June 16, and which was towed to Halifax for examination, will be repaired there. The contract was given the Halifax Dry Dock Co., for $164,000, against a New York tender for $210,000.

On Aug. 22, the s.s. Northumberland was withdrawn from service between Point du Chene, N.B., and Summerside, P.E.I., for repairs, and thae service was discontinued temporarily at least. The s.s. Aranmore is continuing the service between Pictou, N.S., and Charlottetown, P.E.I.

The Department of Marine has bought for $7,000 the s.s. Wilfrid C. from the Shepody Navigation Co., Moncton, N.B., for use in connection with the naval defence of Halifax harbor. She was built at Yarmouth, N.S., in 1897, and is screw driven by engine of 16 n.h.p. Her dimensions are, length 80 ft., breadth 18.5 ft., depth 8 ft.; tonnage, 90 gross, 48 register. The name has been changed to Wilfrid.

The Norwegian s.s. Kristianiafjord, which was reported in our last issue as ashore near Cape Race, Nfld., has become a total loss, owing to the heavy weather prevailing. The Quebec Salvage and Wrecking Co.'s s.s. Lord Strathcona, which was sent to her relief, did some good work, but the wreck was driven farther inshore, and her bows and keel were badly ripped, as well as causing considerable damage to her machinery, making salvage practically impossible. The sale of the vessel as she lies, by public auction, has been advertised.

Toronto Coal and Dock Co., Ltd., has been incorporated under the Dominion Companies Act, with $100,000 capital and office at Montreal, to own and operate steam and other vessels, and to deal generally in coal, lumber and other merchandise.

Province of Quebec Marine.

The Quebec and Levis Ferry Co.'s s.s. John S. Thom, was reported ashore at Devil's Neck, near Charlotte, N.Y., Aug. 21.

Canada Steamship Lines Ltd., has decided that it will not deliver grain from its vessels to any elevator, above lock 2, on the Lachine Canal, unless such unloading was pre-arranged when the contract for freight was mde.

Ontario and the Great Lakes.

The s.s. Thousand Islander, which, during the summer, has been making a Sunday call at Brockville, has eliminated it on the objection of the Lord's Day Alliance.

The Marine Department has announced that the flashing white catoptric light at the west end of Long Point, Lake Erie, has not been discontinued, a previous notice to that effect having been cancelled.

The light near the outer end of the west pier at Charlotte, N.Y., has been changed from a fixed red light to an occulting white light, visible 6 secs. and eclipsed 4 secs alternately.

Supplementary estimates laid before the House of Commons, Aug. 17, include $1,020,000 for the purchase of the steamships J. A. McKee and Thomas J. Drummond, to which allusion has been made in previous issues.

The s.s. Agwinde, formerly owned by the Rainy River Navigation Co., Fort William, has been sold to Capt. I. Budreau, for fishing service at the mouth of Rainy River, and it is stated that it may later on be placed in passenger service on the river.

The s.s. Natironco, which was wrecked in collision with the s.s. Eastern States in the Detroit River, June 19, and beached on the Canadian bank, opposite the Ecorse Shipbuilding Co.'s plant, has been sold to Theo. Colombier, Bordeaux, France, through A. B. Mackay, Hamilton, Ont., for $32,500. She is to be taken as she lies. There were six bids received, all approximating this sum.

It was reported recently that Canada Steamship Lines' s.s. Turbinia, at present running between Toronto and Hamilton, would probably be taken over by the British Government, for war service. We are officially advised that the vessel has been looked over by representatives of the British Government, but that no arrangements have been made for requisitioning her.

The Minister of Marine stated in the House of Commons, Aug. 16, that the s.s. Laurentian was purchased recently from Canada Steamship Lines Ltd., for $50,000. She was formerly known as King Edward, and was built in Great Britain in 1902. She is a screw driven vessel, with engine of 84 n.h.p., and her dimensions are, length 149 ft., breadth 24 ft., depth 11.1 ft.; tonnage, 355 gross, 155 register.

The Brockville-Morristown Transportation Co. is reported to have sold the s.s. John Webster to the United States War Department for about $40,000. This vessel was built in April and was operated between Brockville, Ont., and Morristown, N.Y. She is being taken down the St. Lawrence to the Atlantic and thence to the Delaware River, where it is proposed to use her for transporting soldiers at Fort Dupont.

The Montreal Transportation Co.'s s.s. Westmount, which ran aground at Caribou Island, in St. Marys River, July 30, was released Aug. 4, after about 60,000 bush. of her cargo of grain was lightered.

The Canadian Steel Corporation has filed plans for the construction of a marine slip, harbor works, docks and wharves with a canal running through the property for 2,500 ft., 200 ft. wide and 25 ft. deep, at Ojibway, Ont. It is proposed to build docks along this canal, and also on the Detroit River front.

The Public Works Department has refused an application for the construction of a wharf at Lot 10 at the junction of the Mission and Kaministikwia Rivers, Fort William, on the ground that it would restrict the navigable area in the basin there. The department has also notified the City of Fort William, that its water mains under the Kaministikwia River are dangerous to navigation, and that they must be laid at a greater depth and subject to the department's approval.

A Sarnia dispatch of Aug. 9, stated that the s.s. Rochester, "purchased recently from American parties by the Northern Navigation Lines, and tried on the Georgian Bay run, has been sold to Toronto parties, and will be taken there." The s.s. Rochester was built in 1910 for the Richelieu and Ontario Navigation Co. of the United States, and placed on the U. S. register. On the acquirement of the R. & O. N. Co. by Canada Steamship Lines, Ltd., the ownership of this vessel passed to the new company, and she was retained on the U.S. register, and owned by American Interlake Line. She was not in operation last year, being laid up in Canadian waters, but this year she was chartered to the Northern Navigation Co., which is under Canada Steamship Lines control, and used on that company's Georgian Bay route. We have been advising that nothing is known officially of the reported sale of the vessel.

Furness Withy and Co.'s annual meeting of shareholders was held in London, Eng., July 28. The accounts for 1916 showed a profit, including the balance brought forward from the previous year of £1,182,845 1s. 5d., after providing for the tax on excess profits. Three quarterly dividends were paid on the ordinary shares, at 10% per annum, and the usual half yearly dividends on preference shares, leaving an available balance of £1,004,720 1s. 5d. Of this balance, £350,000 was applied to depreciation account, and £200,000 to trades contingencies fund, making the company's total reserves £1,500,000. A bonus of 10% free of income tax was declared, in addition to the usual 10% dividend on the ordinary shares. The fund which has been formed for distribution amongst the company's masters, officers and engineers, at the close of the war was augmented by £40,000, bringing the total of the fund to £70,000. The company has disposed of its interest in Irvine's Shipbuilding and Dry Docks Co., West Hartlepool, and has acquired a controlling interest in the Prince Line, Ltd., and has also purchased the capital stock of the Queenstown Dry Docks, Shipbuilding and Engineering Co., of Passage West, Ireland. The company is acting as agent for the Admiralty transports loading in America for account of the allied Governments, and the London office is devoted almost exclusively to government work, which is undertaken by the company without remuneration.

It was announced in the British House of Commons, Aug. 7, that the first of the standardized steamships built in Great Britain under the new war schemes, would be placed in service during August.

British Columbia and Pacific Coast.

During June the coastwise tonnage inbound at Vancouver, was 306,958, and outbound 343,314. The ocean tonnage, including all vessels of foreign registry, was, inbound 172,559, and outbound 120,-454 tons.

The Dominion Public Works Department has authorized the commencement of dredging work at the entrance to the inner harbor, Victoria. The channel is to be widened about 100 ft., and temporary lights will be placed during the progress of the work.

A motor boat service has been established between South Prince George and Quesnel, on the Fraser River, during the navigation season. The boat leaves South Fort George on Wednesdays and Saturdays, and Quesnel on Mondays and Thursdays. The single fare is $10, and $15 for the round trip; way points at 10c a mile, meals 50c and beds 50c.

The C.P.R. is reported to be dismantling the s.s. Rossland, which has been operated in the Arrow Lakes service for several years. She was built at Nakusp, B.C., in 1897, and was driven by a paddle wheel, with engine of 38 n.h.p. Her dimensions were: Length, 183.4 ft.; breadth, 29.1 ft.; depth, 7 ft.; tonnage, 884 gross, 532 register.

The C.P.R. put a new schedule in effect, Aug. 8, for its steamship service to the west coast of Vancouver Island. The s.s. Princess Maquinna leaves Victoria on the 1st, 8th, and 22nd of each month, for Quatsino Sound, calling at way ports, and on the 16th of each month she will run to Nootka Sound, calling at intermediate ports.

The Coastwise Steamship & Barge Co.'s s.s. Anyox was launched from the Winslow Marine Railway & Shipbuilding Yards at Seattle, Wash., Aug. 2. On completion she will be used in the ore trade between Anyox and Puget Sound ports. She is 205 ft. long, 39 ft. beam, 23 ft. deep, and is equipped with oil burning engines for a speed of from 10 to 12 knots an hour when fully loaded. The company also owns the steamships Amur, Henriette and Turret Crown.

The Grand Trunk Pacific Alaska Co.'s auxiliary powered vessel Tillamook has been placed in service between Prince Rupert, B.C., and Ketchikan, Alaska, and intermediate ports. The owning company is a subsidiary of the Grand Trunk Pacific Ry., and was recently incorporated at Olympia, Wash. The vessel is registered in the U.S. She is 119 ft. long, 29 ft, beam, and has berth accommodation for 21 passengers. The cargo capacity is about 450 tons, and she will be used chiefly in the fish trade. Two round trips will be made weekly, and an additional trip each week should occasion warrant it.

British Shipping Statistics.—The British Prime Minister stated in the House of Commons, Aug. 16, that during the first six months of this year, 484 of new shipping tonnage was built, and during the last six months, including purchases, the additional tonnage would be 1,424,000 tons. During April, 560,000 gross tons of shipping were lost through enemy submarines, while in July, the lost tonnage due to enemy submarines dropped to 320,-000 gross tons. He stated that with the co-operation of the U.S., there would be sufficient tonnage for 1918, and if necessary 1919 as well.

Canadian Government Vessels Launched at Toronto.

By the launching of 2 hulls, Aug. 1, Polson Iron Works, Ltd., Toronto, completed the preliminary stage of the construction of 6 steel steamships for Canadian Government service. Four of these hulls were launched June 16, and a full description with diagrams of the vessels and a view of the hulls on the launching ways, were given in Canadian Railway and Marine World for July. The first four launched were named respectively, Ypres, Vimy, Messines and St. Julien, and the last two launched were named St. Eloi and Festubert respectively. The christenings on Aug. 1 were carried out by Mrs. J. B. Miller and Mrs. A. H. Jeffrey, the wives respectively of the President and the Manager and Secretary, Polson Iron Works.

The dimensions of the vessels are: Length over all, 140 ft.; breadth, 23½ ft.; depth moulded, 13½ ft. The propelling machinery consists of fore and aft compound surface condensing engines, with cylinders, 18 and 38 in. diam. by 24 in. stroke, developing 500 h.p., and supplied with steam by water tube boilers at 180 lb., and equipped with down draught. Each of the vessels will be fully equipped for salt water service before leaving the Toronto yards, and some special equipment is to be added at Montreal before the vessels enter their ultimate service.

Grounding of the s.s. Letitia.

Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Commanders C. White, R.N., and E. Wyatt, R.N.R., as nautical assessors, held an enquiry at Halifax, N.S., Aug. 13 and 14, into the grounding of Anchor-Donaldson Line s.s. Letitia near Portugese Cove, in Halifax harbor, Aug. 1. The vessel was being utilized as a hospital ship, and conveying a number of wounded and convalescent soldiers to Canada. One life was lost as a result of the casualty. After hearing the evidence, which the court pronounced as straightforward and to the point, the commissioner commented on the conduct of the master and officers. In the former case, he said, "His share in the landing safely of the wounded soldiers and others, speaks well in his favor, as well as his long and successful career, and these are sufficient reasons for belief that in trusting so faithfully to the pilot, was under the circumstances an excusable error of judgment, and a warning in his case is unnecessary, as the court is positive that no pilot well ever succeed in imposing in such a manner on him again."

Regarding the pilot, it was found that the exceptional prudence and care demanded, owing to the exceptional circumstance of navigating a hospital ship, were not exercised, and a haphazard method was adopted, with the consequence that a valuable vessel was lost, one life lost and one officer crippled for life. It is providential that a greater disaster was not registered, and this was due to the calm weather, strict discipline and sang froid shown by the military and the ship's staff. The court also considered what was described as the unenviable reputation which the coast and the port of Halifax is gradually gaining, and hopes that this action, not wilful, but stupid, of this pilot, will not remain a stigma on a port with such natural facilities and so easy of access. While condemning the pilot for gross negligence, it also condemned the custom which seems to prevail, as admitted by the pilot, of giving and receiving a course or bearing from a member of the cutter's crew. That such a man should offer a bearing and that it should be accepted by a licensed pilot, supposedly rational, would seem a fable, were its reality not brought so forcibly to general knowledge. The court felt keenly about this casualty, and in order that a repetition may be impossible and as a deterrent to any inclined to carelessness, decided to deal severely with the pilot. Had it not been the custom for pilots to take their possible position from another, the criminal courts would have been requested to deal with this case, but under the circumstances the court cancelled the license of the pilot, Walter White, no. 24, and the Halifax Pilotage Commission was requested to see that the court's order is carried out. The court also suggested that a general and thorough enquiry should be made into the pilotage system in Halifax, in order to bring about a betterment so as to induce the confidence of the shipping public. A better and more thorough system of examination is needed.

Mainly About Marine People.

W. G. Ross, President, Montreal Harbor Commission, has been given the British Navy League's special service decoration, as a recognition of his services for British sea power.

Robert Preston, organizer and Manager of the Westminster Towing & Fishing Co., died at New Westminster, B.C., Aug. 1. He was a native of St. Stephen, N.B., and had lived in British Columbia since 1864.

C. H. Nicholson, Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C., was presented with a silver tea and coffee service by the local office staff and vessel crews, Aug. 1, to mark the 25th anniversary of his wedding.

Major H. Maitland Kersey, D.S.O., Managing Director, Canadian Pacific Ocean Services, Ltd., London, Eng., is offering a prize to be given at the end of each year, to the cadet studying on the training ship Conway, showing the greatest proficiency in the management of boats. The prize consists of a sextant.

T. H. Allan, heretofore yard superintendent, Wallace Shipyards, North Vancouver, B.C., has been appointed General Superintendent. He has been 25 years connected with shipbuilding, having served his apprenticeship at Superior, Wis., though of English birth. He was later in service with John Brown & Co. and Vickers Son & Maxim, shipbuilders, of Scotland and England respectively.; Collingwood Shipbuilding Co., Collingwood, Ont.; British Columbia Marine Railway Co., Esquimalt, B.C., and since Jan., 1916, with Wallace Shipyards, Ltd.

Hugh A. Allan, Chairman of the Allan Line Steamship Co., was presented with an illuminated address by the directors and staffs of the London, Liverpool and Glasgow offices, recently, on his retirement, due to the Allan Line passing under C.P.R. control. He was connected with the Allan Line for 40 years, 32 of which were spent in Canada, and the last 8 years in London, Eng. In referring to the passing of the Allan Line, Mr. Allan said: "The Allans have been in the North Atlantic trade for 98 years, and now that my brother, Andrew, and I, the last representatives of the family, are giving up the agencies on both sides of the Atlantic, I feel that the connection has been broken."

Overseas Transportation and the War.

The overseas transportation service, which is under the direction of the acting Director of Overseas Transport, is closely associated with the Marine Department, and its work was referred to by the Minister of Marine in the House of Commons, Aug. 6, in dealing with his report for the year ended Mar. 31, generally as follows: The branch is responsible for the movement of all transports, carrying either troops or munitions, for the provision of all necessary escorts at sea, and for advising the Imperial authorities, giving detailed information by telegraph of the cargoes of all transports before they arrive in England, the Admiralty and War Office then being able to make the necessary arrangements for handling the cargoes on arrival. During the year under review, the work increased greatly. There is general control of the traffic inland, by rail or otherwise, covering its reception and storage at points of shipment, the allocation of cargoes to different vessels, and the storage on board. The Naval Service Department is responsible for the movement of these vessels, the supply of sufficient tonnage to meet transportation demands, and the routing of same. Through co-operation, the transportation problems have to a large extent been overcome, and a high degree of efficiency has been attained. All expenses in connection with this service are defrayed by the Dominion Government on behalf of the Imperial Government, on presentation of certified invoices. Contracts are made for the supply of bunker coal as required, and during the year, 230,000 tons were purchased from Canadian firms for transports. Arrangements were also made for repairing and fitting vessels for special purposes, and for the supply of provisions, stores and gear as are required while vessels are in Canadian ports.

The average export movement for the year ended Mar. 31, was over 200,000 tons a month, or roughly, 8 fully loaded freight trains of material a day. The monthly total now exceeds 360,000 tons, and the sailings average two a day. During the year, a total of 386 sailings, comprising 2,429,829 tons, cleared from Canadian ports. These figures show a large increase over the previous year, when 198 sailings comprising 970,911 tons, were made. The Minister said that the department's thanks were due to the C.P.R. for the services of a number of experienced transportation officers, as well as for its ready co-operation at all times.

Stranding of the s.s. Singapore.—An investigation was held at Montreal recently by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. F. Nash and C. Lapierre, as nautical assessors, into the causes which led to the stranding of the s.s. Singapore at Metis Point in the River St. Lawrence, July 1. The court found that the master, F. W. Hatswell, showed proof of poor judgment, and that a very indifferent lookout was kept by the second officer. Under the circumstances the master's certificate was not dealt with, but he was reprimanded very severely. The court said that it had no warrant to eulogize or to condemn the St. Lawrence or Canadian waters, but having had 14 years in exploring every part of it, it could safely say that if ordinary prudence be exercised, there is no reason for such a casualty to occur.

The Equipment of Auxiliary Powered Vessels.

With reference to the auxiliary powered vessels built for the Canada West Coast Navigation Co., on the Pacific coast, Motorship, a paper devoted to the interests of motor driven vessels, says: "If the motors are genuinely used as an auxiliary to the sails, the power is sufficient, but if the sails are auxiliary to the engines, she is without doubt underpowered. The non-success of several auxiliaries has been due to the fact that when such vessels were ordered, owners intended to use the motors for getting in and out of harbors and for docking; but after the vessels were in service the captains receive instructions to use the engines continuously, which, of course, is quite unfair to the machinery. Personally, we think that these vessels are underpowered and that two 300-400 b.h.p. motors should have been installed, because the motors are sure to be used constantly, which, of course, is too much work to expect from engines which are not meant to drive the boat at any substantial and prolonged speed. The engines are there, and doubtless the crew, if not the owners, will expect them to do the work of machinery of a full powered ship of this size." The vessels are equipped with two 160 b.h.p. Bolinder surface ignition oil engines.

Radiotelegraphy in Canada During the War.

In a statement to the House of Commons, Aug. 6, respecting the work of his department for the fiscal year ended Mar. 31, the Minister of Marine, in dealing with radiotelegraphy, said that the government's policy, to develop and maintain under government control, the radiotelegraph service, was being continued. All amateur stations, which were closed down at the commencement of the war, remained so. The service is playing an important part in the war, particularly in providing communication for such vessels of war as may be operating in the vicinity of Canadian waters. The government stations on the Atlantic and Pacific coasts are well adapted for such purposes, and by reserving certain stations for naval work solely, adequate facilities have been provided. There are 156 coast, land and ship stations in the Dominion, 67 being government land and ship stations, 75 are commercial ship stations and the remaining 13 are commercial land, coast and instructional stations. There are 404 persons employed in the service, or whom 137 are in the government's employ. Of the 43 coast stations, 42 are owned by the government. Those on the west coast and Hudson Bay are operated directly by the Naval Service Department, and those on the Great Lakes and east coast, with certain exceptions are operated by the Marconi Wireless Telegraph Co. under contract. During the war, certain stations on the east coast have been taken over and operated directly by the Naval Service Department, for naval purposes solely. The section of the Radio-Telegraph Act calling for the compulsory equipment of certain steamships with wireless facilities, has been efficiently carried out, and no attempts to evade the act's requirements were reported. During the year, 141 operators were examined for certificates and 87 were successful, and to the end of the year, 176 proficiency certificates had been issued. The regular work of the stations was carried on so far as war conditions permitted, and there were large increases in the number of messages and words, as well as in revenue over the previous year.

Government Hydrographic Surveys.

In discussing the estimate to provide $200,000 for hydrographic surveys, the work under W. J. Stewart, Chief Hydrographic Officer, was outlined by the Minister of Marine, in the House of Commons, Aug. 6, as follows:

Atlantic Coast.—Survey along the southeast coast of Nova Scotia, from Halifax harbor; to modernize present charts.

Lower St. Lawrence, s.s. Cartier.—Extending eastward from the river; work has been completed as far east as Point des Monts on the north shore and Cape Chat on the south shore. It is intended to carry the work along the south shore, covering the route of vessels approaching the St. Lawrence.

Lake Superior.—The s.s. Bayfield will survey the more exposed coasts on the lake, in the vicinity of Caribou Island and Michipicoten. The s.s. La Canadienne is surveying more sheltered waters; that on Nipigon Bay has been completed, and Black Bay is to be completed this year, and if time permits the vessel may be moved to work in the north channel of Lake Huron.

Pacific Coast.—The s.s. Lillooet is working round Queen Charlotte Islands and Hecate Strait.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

L'Air Liquide Society.—E. Jordan has been appointed Canadian Representative and Chief Engineer, succeeding C. Royer, resigned.

Independent Pneumatic Tool Co., Chicago, Ill., and 334 St. James St., Montreal, has issued circular Z, describing in detail its line of Thor pneumatic tools and electric drills.

Berry Brothers, varnish manufacturers, Walkerville, Ont., have arranged for group life insurance, covering all their employes who have been in their service for six months, the insurance ranging from $500 to $1,000, according to the term of service.

Smoke Nuisance Along Navigable Waterways.—The Dominion Marine Association is taking up this matter with the Ontario Department of Lands, Forests and Mines, with the view of obtaining some changes in the regulations respecting the burning of brush, and the making of fires of any kind which tend to increase the smoke nuisance along navigable waterways, particularly in the Upper Lakes channels. The Department is investigating with regard to the period during which the lighting of fires shall be permitted.

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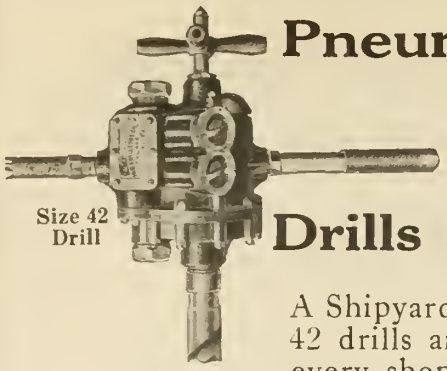
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10 in.	1	⅜, ½, ¾, 1 in.	$5.00	$2.25	⅜, ½, ¾, 1 in.	$ .75
20 in.	2½	¾, 1, 1¼, 1½, 2 in.	7.50	2.50	¾, 1, 1¼ in.	1.00
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25 in.	3½	1½, 2, 2½, 3 in.	7.50	3.00	1½, 2, 2½, 3 in.	1.25

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Boiler Pressure Av.	186	187.8
M. E. P. H. P. Cyl. Av.	63.5	82.8
" " " I. P. " "	40.6	39.7
" " " L. P. " "	13.7	15.4
Ref. M. E. P. " "	37.9	42.5
Vacuum (Inches) "	24.3	24.8
R. P. M. "	93	94.8
I. H. P.	**775**	**887**
Pressure I. P. Rec. Av.	72	65.7
" L. P. " "	16.4	15.4
Steam temperature at throttle (deg. F.) Av.	382	527
Steam temperature at throttle (deg. F.) Max.	382	608
Coal per hour—lb.	2024	1968
Coal per I. H. P. hour—lb.	**2.61**	**2.218**
Fuel Economy—per cent	—	**15%**
Indicated Thrust	20272	22900
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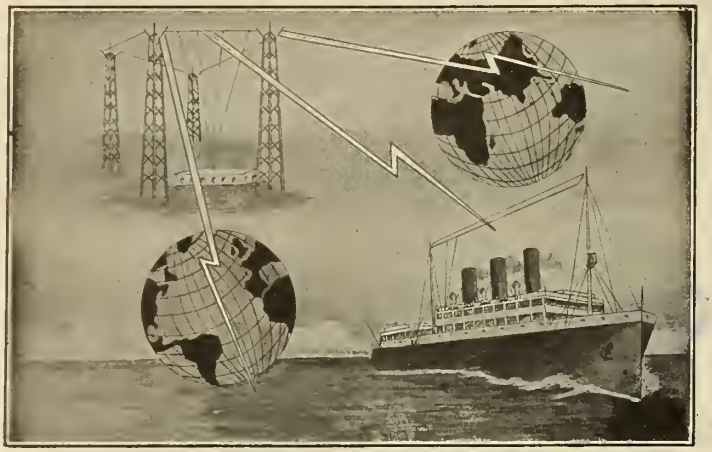

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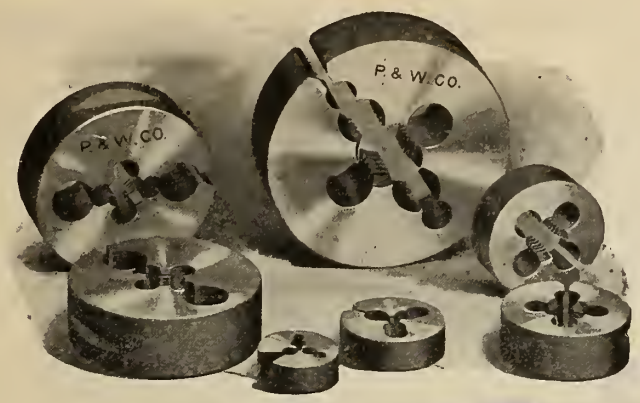

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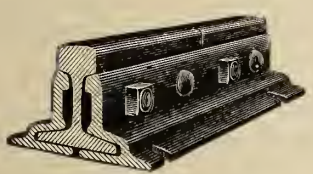

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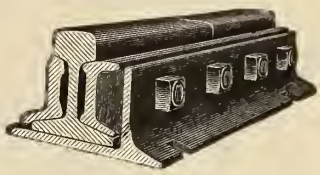

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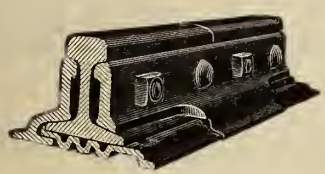

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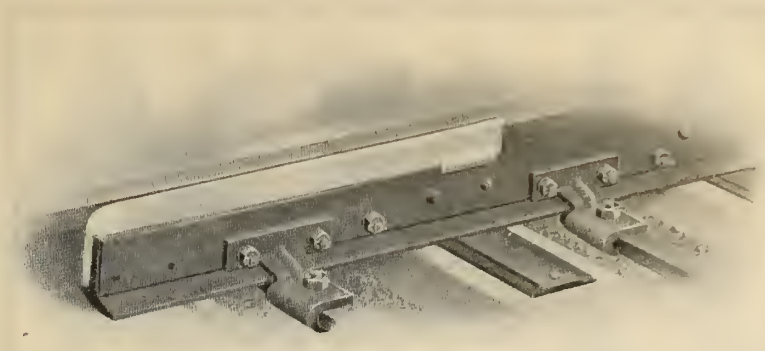

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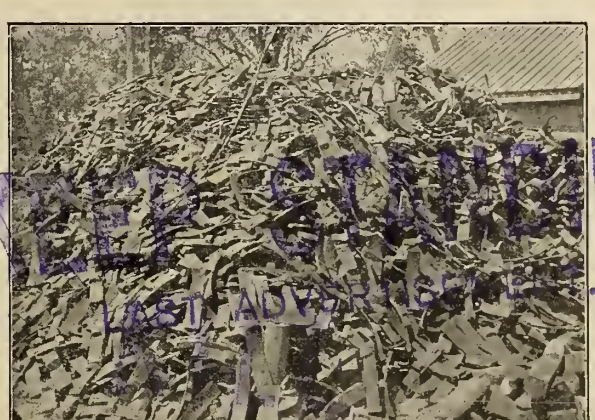

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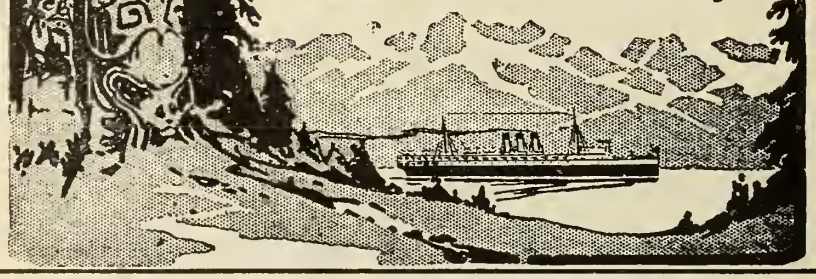

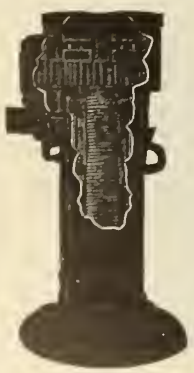

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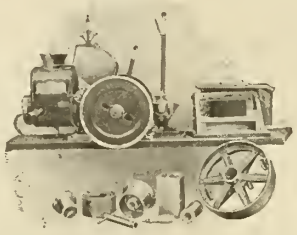

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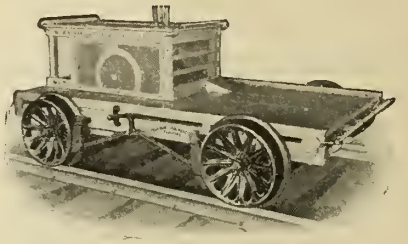

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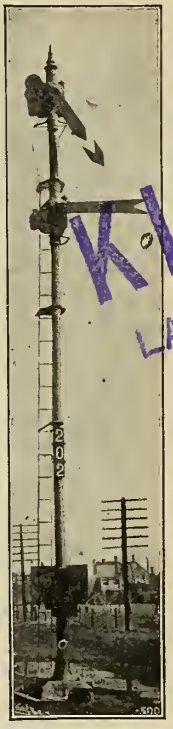

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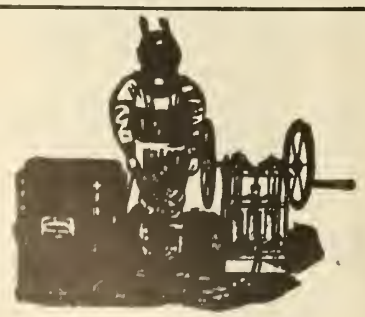

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Dividend Notice.

At a meeting of the Board of Directors, held today, the following dividends were declared:

On the Preference Stock, two per cent. for the half year ended 30th June last.

On the Common Stock, two and one-half per cent. for the quarter ended 30th June last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account.

Both dividends are payable 1st October next, to shareholders of record at 1 p.m. on 1st September next.

By order of the Board,
ERNEST ALEXANDER,
Secretary.

Montreal, 13th August, 1917.

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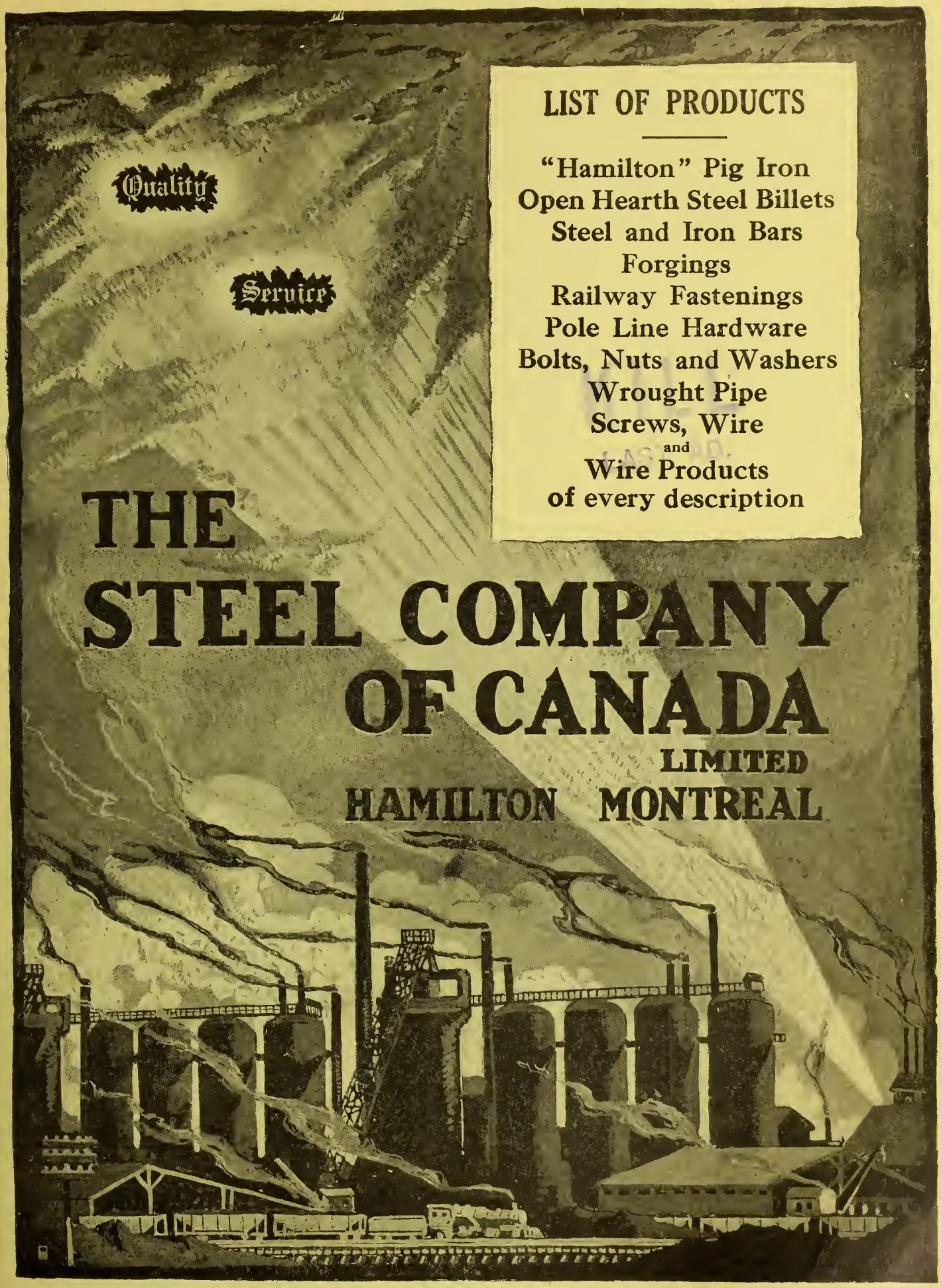
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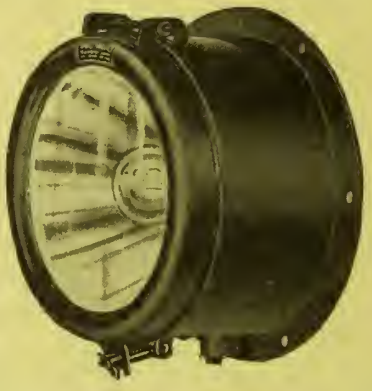

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Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 236 TORONTO, CANADA, OCTOBER, 1917 Subscription Rates, Page 399

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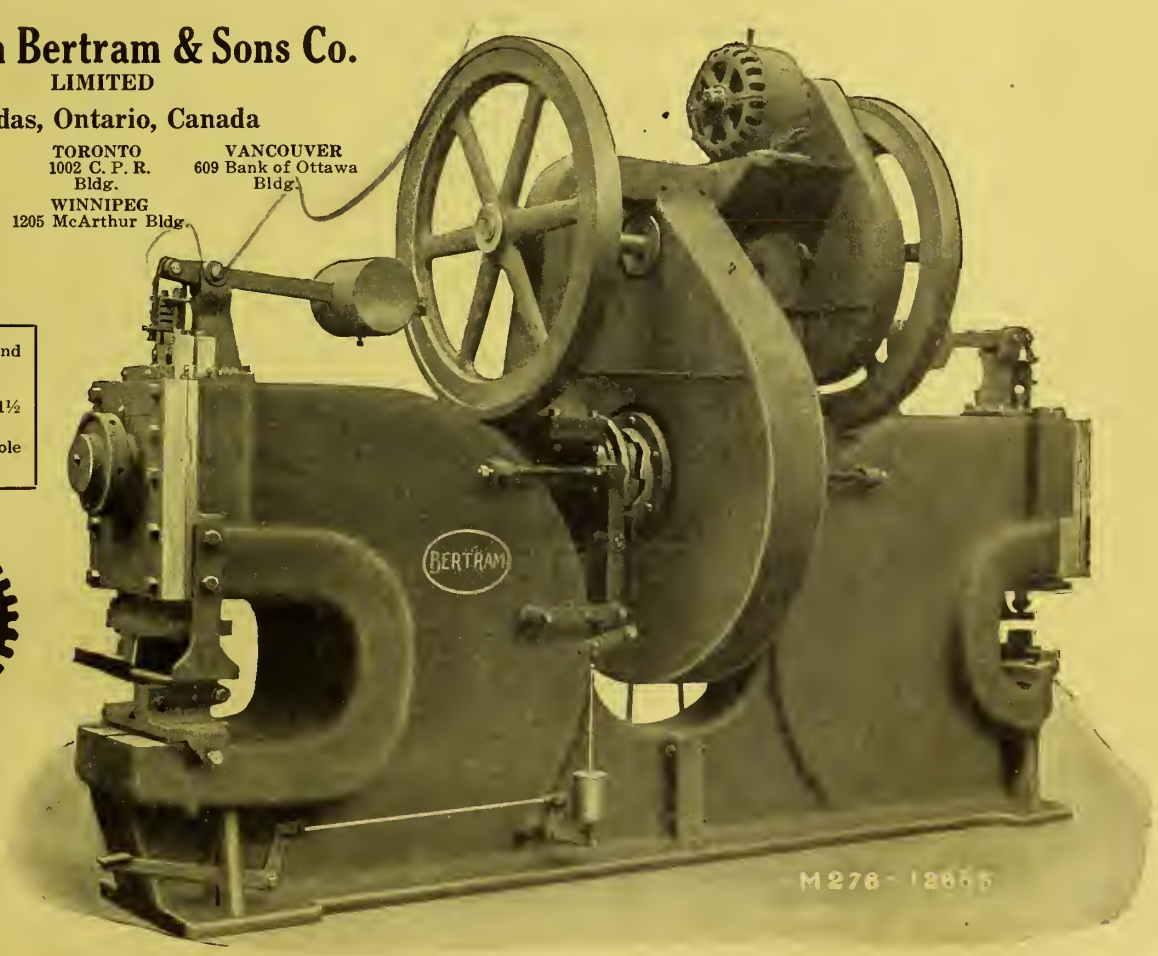

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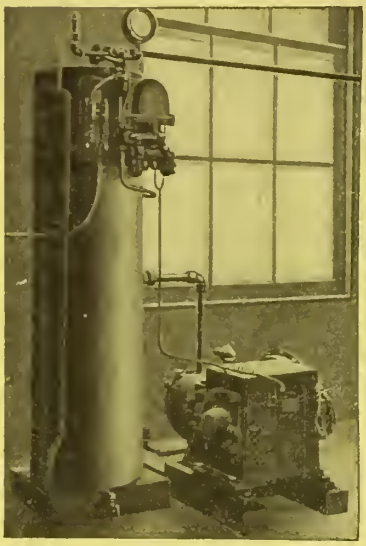
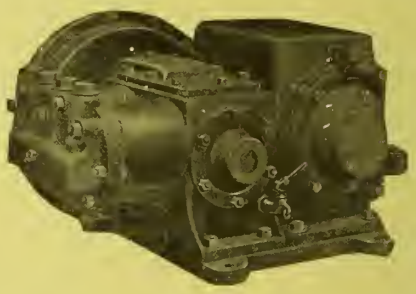
Westinghouse



A Westinghouse Motor-Driven Compressor Installation.

Motor-Driven Air Compressors For Industrial Service

Built in four standard capacities rated at 14½, 25, 37½ and 50 cubic feet of free air per minute, and fitted with Direct Current Motors for 110, 220 and 600 volts.

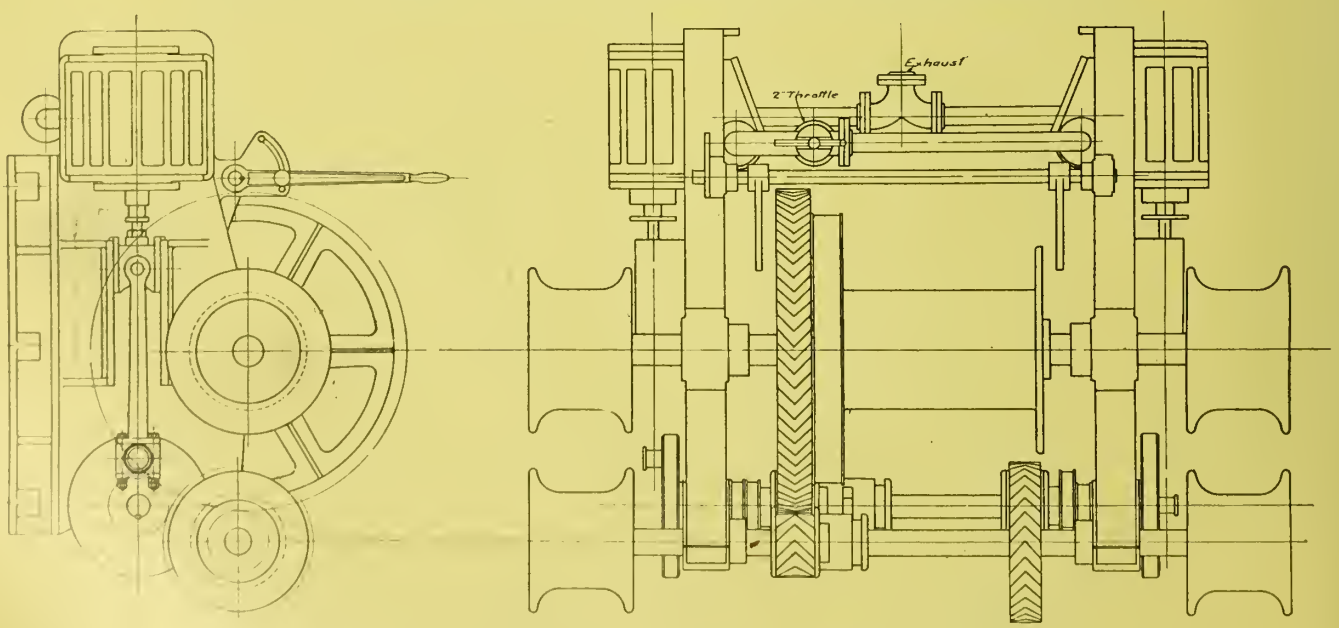


Our National line of compressors can be furnished for alternating current in all standard voltages and frequencies.

Canadian Westinghouse Co., Limited, Hamilton, Ont.

TORONTO, Traders Bank Bldg. MONTREAL, 52 Victoria Sq. OTTAWA, Ahearn & Soper, Ltd. HALIFAX, 105 Hollis St. FT.WILLIAM, Telfer Bldg.
WINNIPEG, 158 Portage Ave. E. CALGARY, Grain Exchange Bldg. VANCOUVER, Bank of Ottawa Bldg. EDMONTON, 211 McLeod Bldg.

Cargo Winches, Trawl Winches, Anchor Windlasses, Ash Hoists, Dock Winches, Derricks, Etc.



Send us your specifications for Auxiliary Ship Machinery—We'll quote promptly.

M. BEATTY & SONS, Limited, Welland, Ont.

GALENA OILS

HAVE NO EQUAL IN

QUALITY, EFFICIENCY and ECONOMY

SOLE MANUFACTURERS OF

Celebrated Galena Coach, Engine and Car Oils

LUBRICATION ON A GUARANTEED BASIS

ELECTRIC RAILWAY LUBRICATION A SPECIALTY

Perfection Valve and Signal Oils

Galena Railway Safety Oil—Made especially for use in headlights, marker and classification lamps.

Galena Long Time Burner Oil—For use in switch and semaphore lamps, and all lamps for long time burning, avoiding smoked and cracked chimneys and crusted wicks.

TESTS AND CORRESPONDENCE SOLICITED

Galena Signal Oil Company

Works

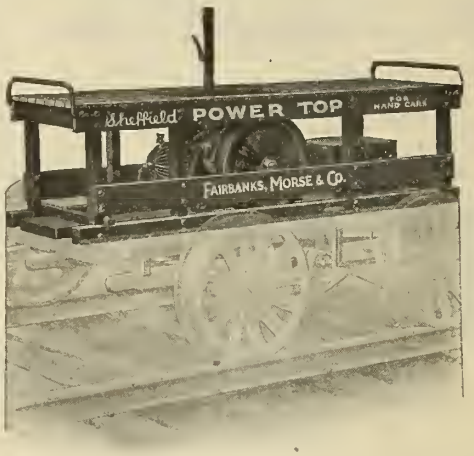
Franklin, Pa., and Toronto, Ont.

Canadian Representative — Robert McVicar, 603 Shaughnessy Bldg., Montreal, Que.

THE CANADIAN FAIRBANKS-MORSE COMPANY, LIMITED.

CANADA'S DEPARTMENTAL HOUSE FOR MECHANICAL GOODS

KILL LAST AD.



Sheffield Power Top
for Hand Cars

The only Motor Car engine outfit that successfully burns coal oil—and it's air cooled.

Any hand car is easily changed into a powerful Motor Car.

5 H.P. air cooled two cycle engine—three working parts. Absolute speed control.

No carburetor to be adjusted—no valves—no water to boil over in summer, or freeze in winter. So simple that it can be handled by the least experienced.

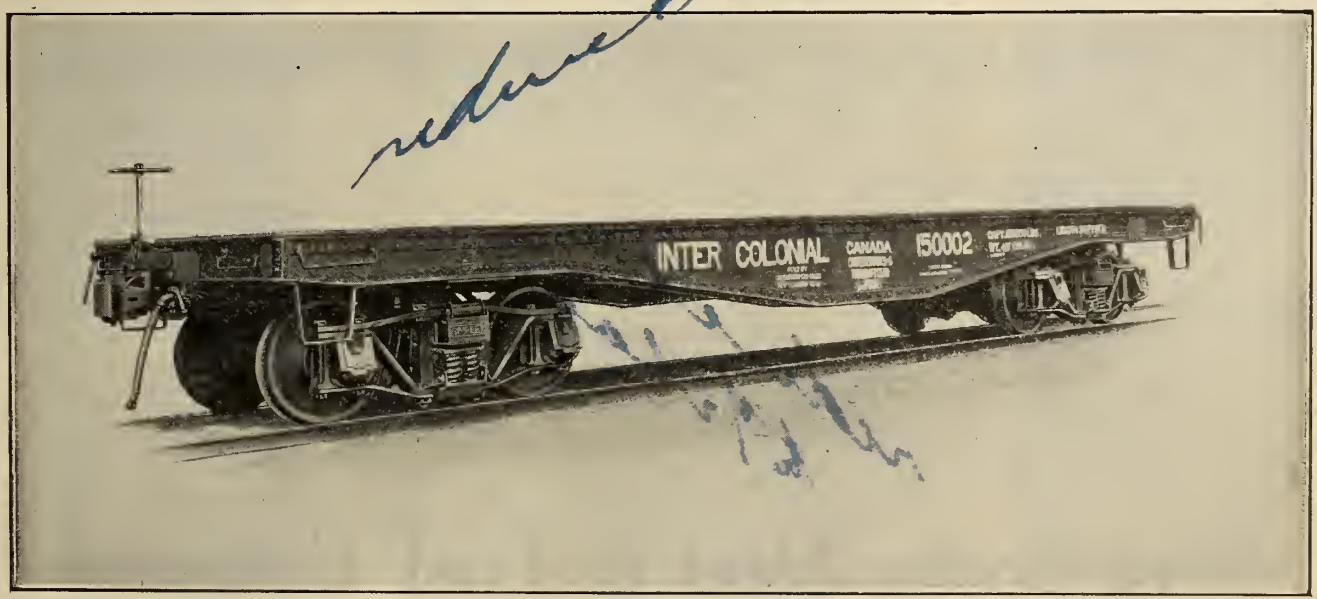
The Canadian Fairbanks-Morse Co., Limited

St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Windsor, Winnipeg, Saskatoon, Calgary, Vancouver, Victoria.

ONE OF 2,000 GONDOLA CARS NOW UNDER CONSTRUCTION FOR THE FRENCH GOVERNMENT.

FREIGHT CARS TO FOREIGN ORDER

We have unexcelled water and rail shipping facilities for the export of freight cars of all types abroad or to United States markets. Our manufacturing capacity reaches to 40 cars per day. Although fully employed in filling and conducting negotiations for further foreign orders, our exceptional output facilities enable us both to take care of these and others in the order in which they are received.



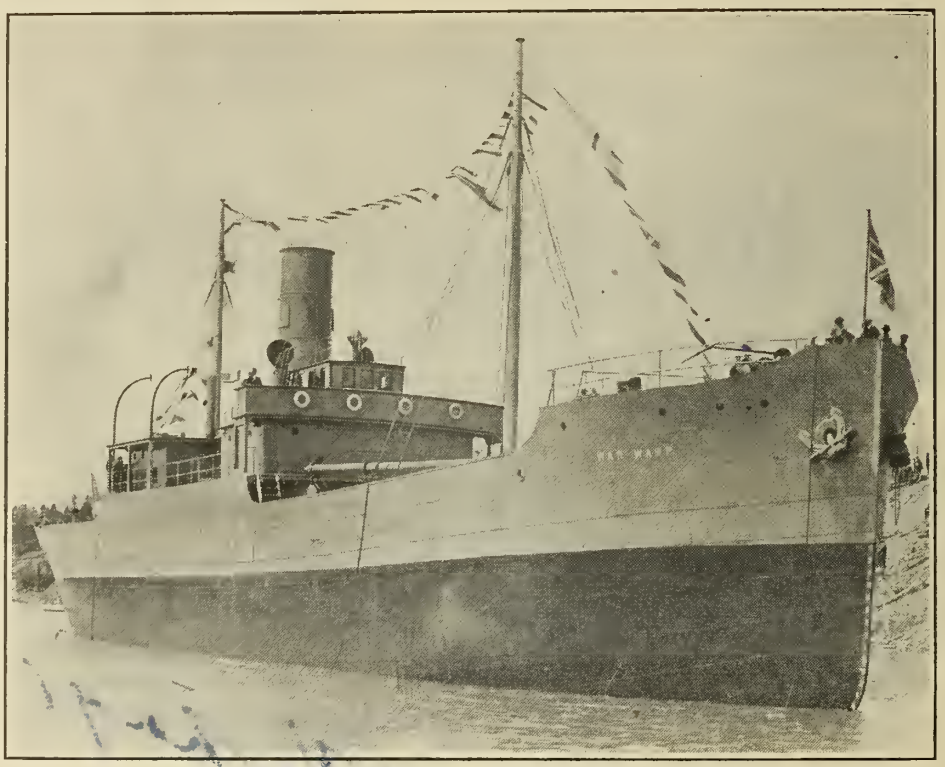
75 TON SPECIAL PIT CAR FOR CANADIAN GOVERNMENT RAILWAYS.

FLAT CARS, CABOOSES, AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

Eastern Car Company, Limited

General Offices and Works, New Glasgow, N.S. **Montreal Office, Room 14 Windsor Hotel**



Steamer War Wasp

First steel ocean-going steamer built in the Maritime Provinces.

Nova Scotia Steel & Coal Company

LIMITED

Head Office - New Glasgow, Nova Scotia

Give Your Men Good Locomotive Cranes to Use

It pays. Whether it is in storage yard, at shop, or out on the road, a good locomotive crane shows to a big advantage. The work is not delayed every now and then by frequent break-downs. Nor are your men subject to accident by overloading the crane. A good locomotive crane is well built and has a large overload capacity. The work is assured of being done quickly and satisfactorily.

The Brownhoist Locomotive Crane is a good crane. You can determine for yourself by investigating its construction from tip of boom to the standard M.C.B. trucks. And also inquire among your friends. Some of them use the Brownhoist. It may cost more—but is worth it.

The Brown Hoisting Machinery Co.

Cleveland, Ohio, U. S. A.

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller Cranes and Hoists.

Branch Offices in New York, Pittsburg; Chicago, San Francisco, and (Portland, Ore., Colby Eng'r Co.)

We Have No Coal

B U T

We can help you to make your present stock go farther, last longer and do more work per ton.

That will save you money and coal. In fact it is like **finding** a little **extra** coal for you.

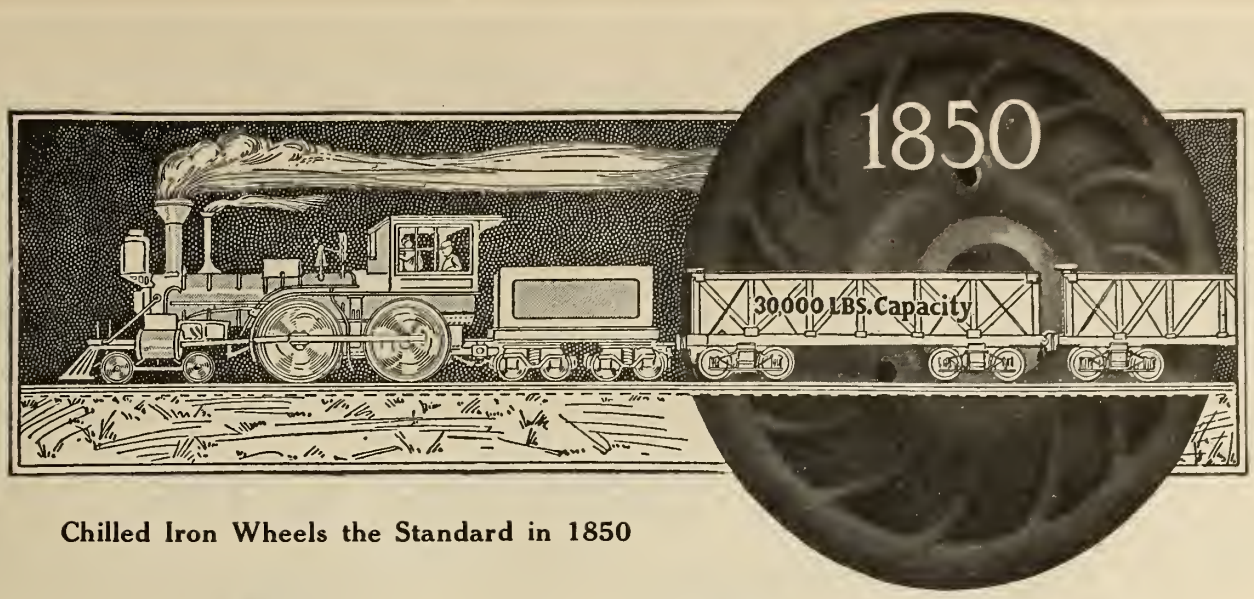
Anchor Steam Hydraulic Packings stop leaks, save steam and water and save coal.

Let us supply you with a little extra coal through the use of Anchor Packings.

Montreal
Toronto

CANUCK SUPPLY COMPANY LIMITED

Winnipeg
Vancouver



Chilled Iron Wheels the Standard in 1850

The Wonderful Single Service Chilled Iron Wheel

Considered from a chemical, physical and metallurgical standpoint, the Chilled Iron Wheel possesses certain inherent properties which are not found in other metals.

The higher combined carbon in the tread or running surface of the wheel produces the hardness which is so necessary for a maximum wear and the chilled treads will not crush or flow under the heaviest traffic pressure.

The plates are soft with an open fracture which enables the wheel to resist temperature stresses due to brake application.

The hubs are soft, which insures a strong and perfect axle fit.

These conditions are ideal for service and there is no other metal that possesses this graded hardness of structure.

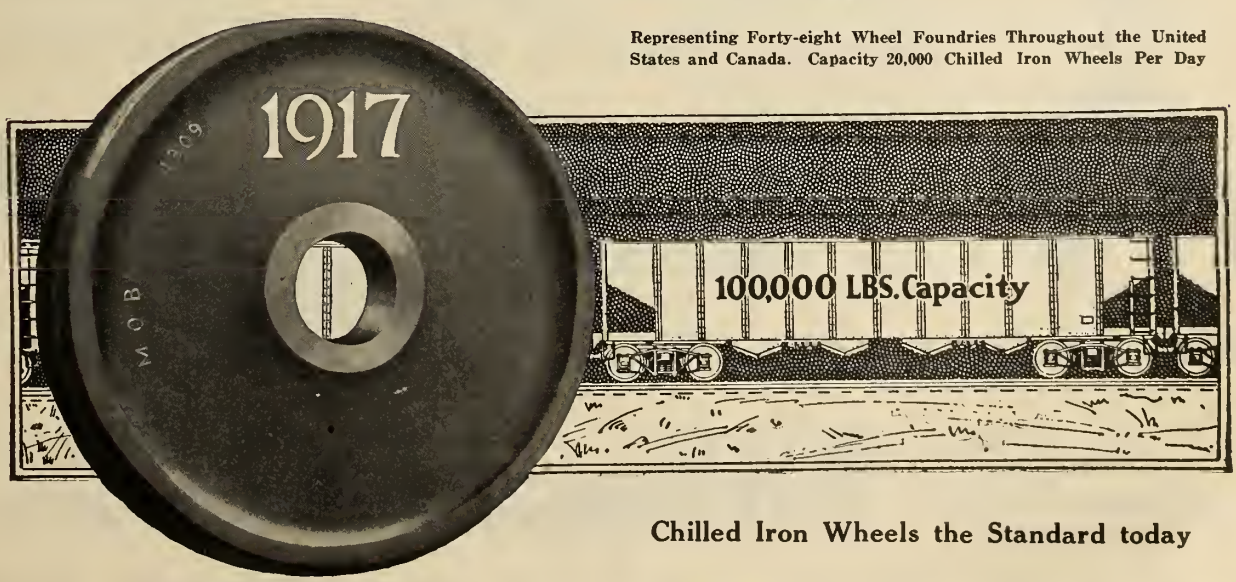
The single service, one-wear chilled iron wheel, because of its hardness, will give a greater mileage per unit of metal worn away than any other type of wheel.

25,000,000 now running.

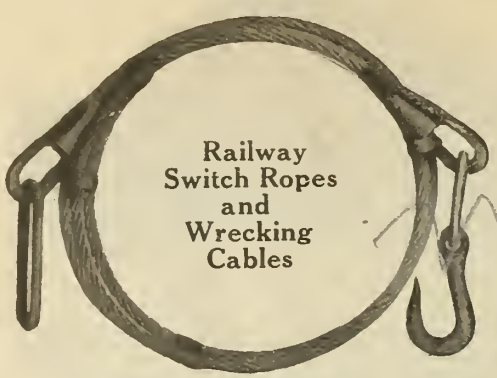
Association of Manufacturers of Chilled Car Wheels

1228 McCormick Building, Chicago

Representing Forty-eight Wheel Foundries Throughout the United States and Canada. Capacity 20,000 Chilled Iron Wheels Per Day



Chilled Iron Wheels the Standard today



SAFETY FIRST

Use

"DOMINION" Wire Rope

Tough—Strong—Durable

The DOMINION WIRE ROPE Co., Limited

Montreal Winnipeg Toronto

General Service Cars

Otis Dump Cars

For Standard or Special Service

The HART-OTIS CAR CO., Limited, MONTREAL

–SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA–

"MARION" Drag Line Machines, Steam Shovels and R. R. Ditchers

"HAYWARD" BUCKETS

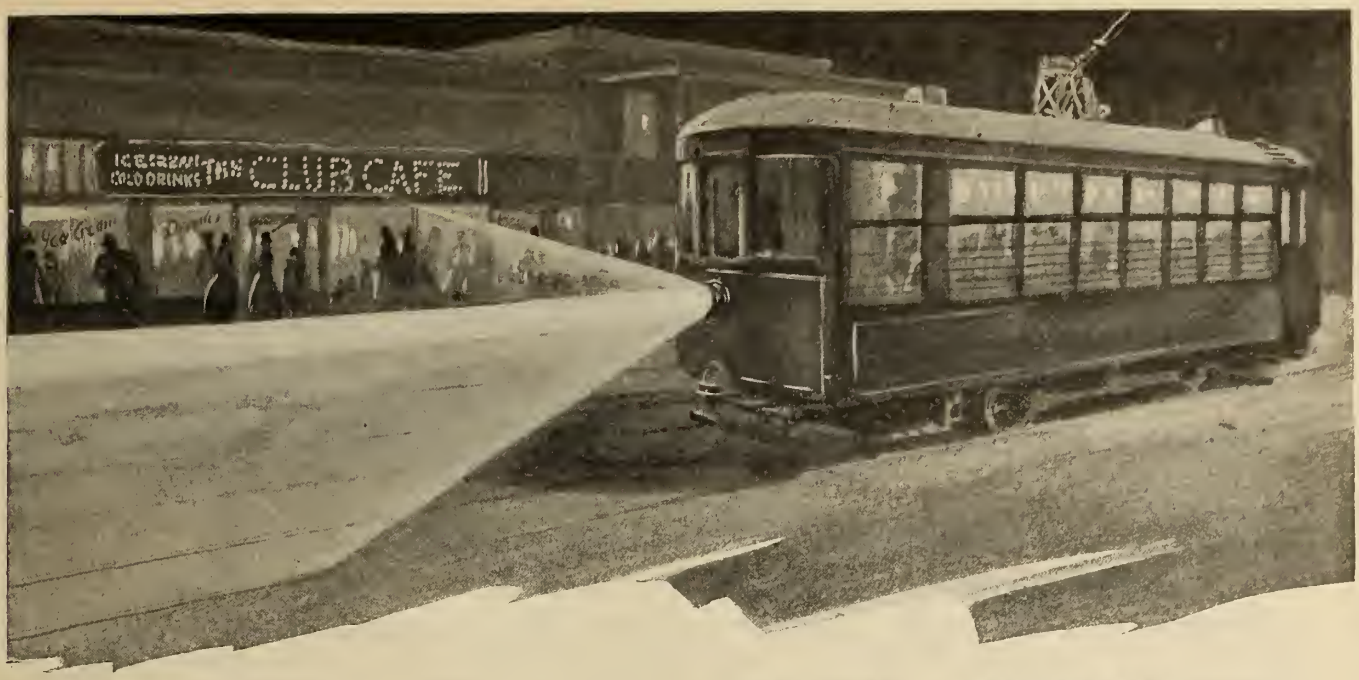
Indispensable for General Contractors' Work

SIMPLE—POWERFUL—QUICK ACTING

Branch:
108 Mail Building
TORONTO

F·H·Hopkins & Co

Head Office:
MONTREAL



A Good Car in Night-time as Well as Day-time

"Golden Glow"

Is the Reason

"Safety" one-man car is now in use at a number of cities.

Among them is Fort Worth, Texas where it is helping to secure more revenue by permitting more service at less expense.

You know that the equipment of this car was selected with more than usual care. Where necessary, higher first cost was subordinated to ultimate lower costs in efficiency, operation and upkeep.

Isn't the selection of "Golden Glow" headlights for this car full of meaning to you?

"Golden Glow" Headlight Type S E-95

Remember This—

That "Golden Glow"—the name behind these famous headlights—stands for a powerful beam of golden-yellow light which is less blinding and more penetrating than a white light. A beam of light which can be produced only by the famous "Golden Glow" mirrored glass reflectors.

"Golden Glow" Reflectors are the result of much scientific research and perfection. They are moulded from a greenish-yellow glass, ground by special patented machinery to a true parabola and polished and silvered as would be the finest French plate mirrors.

Electric Service Supplies Co.
Manufacturers
PHILADELPHIA NEW YORK CHICAGO
17th and Cambria Sts. 50 Church St. Monadnock Bldg.

Lyman Tube & Supply Co., Ltd.
Canadian Distributors
MONTREAL
Lyman Tube Bldg.
TORONTO
33 Melinda St.

Perishable Products Properly Protected

The **MOORE SYSTEM** of Refrigeration, Heating and Ventilation provides the greatest measure of protection in **all** seasons.

The **MOORE SYSTEM** is economical—provides 20% more loading space, requires 20% less equipment, and 20% less operation and repairs.

The **Refrigerator** is dry and refrigerates all the load with one-third less ice.

The **Heater** protects all the load against frost in coldest weather. It constantly supplies fresh air and removes gases, fumes and odors. It keeps the load fresh and prevents wilt, shrivel, smoke, taint or freeze. It is operated from outside the car, is simple and requires no special attendant. It **can** be used in **any** refrigerator car, and **should** be used in **all** refrigerator cars.

It is the system that reduces damage claims to a minimum.

Refrigerator, Heater and Ventilator Car Co.

St. Paul, Minnesota

See the

Canadian Northern Rockies

en route to the PACIFIC COAST

by the Natural Wonders of Jasper Park
and Mount Robson, Monarch of the Range

You will be amply repaid. Convenient Train Service. Summer Tourist Fares.

For through tickets, information and our handsome Mountain Booklet apply to nearest C.N.R. Agent or General Passenger Dept., Montreal, Que., Toronto, Ont., and Winnipeg, Man.

CANADIAN NORTHERN RAILWAY

KILL
LAST AD.

National Railroad Trolley Guard Makes Grade-Crossings Safer

Because the track is usually rough and the trolley wire high at a crossing with a steam road, it is a logical place, and the most dangerous one, for the trolley wheel to leave the wire.

Many serious accidents have occured because the trolley flew off and left a car stalled in front of a train.

National Trolley Guard would have prevented all of them. It is made of open wire mesh installed over the trolley wire like an inverted trough.

When the wheel jumps National Guard catches it and furnishes current to carry car and cargo out of danger.

Sold Only by

The Ohio Brass Co., Mansfield, Ohio

SCALE

The object of the many expensive devices that are applied to locomotives for the purpose of saving fuel is defeated by scale gradually building up on the heating surfaces of the boilers.

It has been proven by careful investigation that the loss of efficiency due to scale formation is much greater than is generally known. Incrustation ranging from 1-32nd to 1-16th of an inch thick causes a loss of from 7 to 15% in heat units.

Investigation will show that the cost of **Dearborn Treatment** necessary to prevent scale formation is a small percentage of the saving that it is possible to make by keeping the heating surfaces of the boilers clean.

Send gallon samples of the water supplies for analysis and further information.

Dearborn Chemical Company of Canada, Limited

1220-1230 Dundas Street, TORONTO, CANADA

Make Uncle Sam's Standard Your Standard

After Careful, Complete and Conclusive Tests Uncle Sam Has Officially Adopted Craftsman Quality No. 1

DU PONT FABRIKOID

REG. U. S. PAT. OFF.

The U. S. Standard Ship Upholstery Material

The best upholstery material for ships is obviously the best for railroads—Uncle Sam's O. K. is a splendid guide for you.

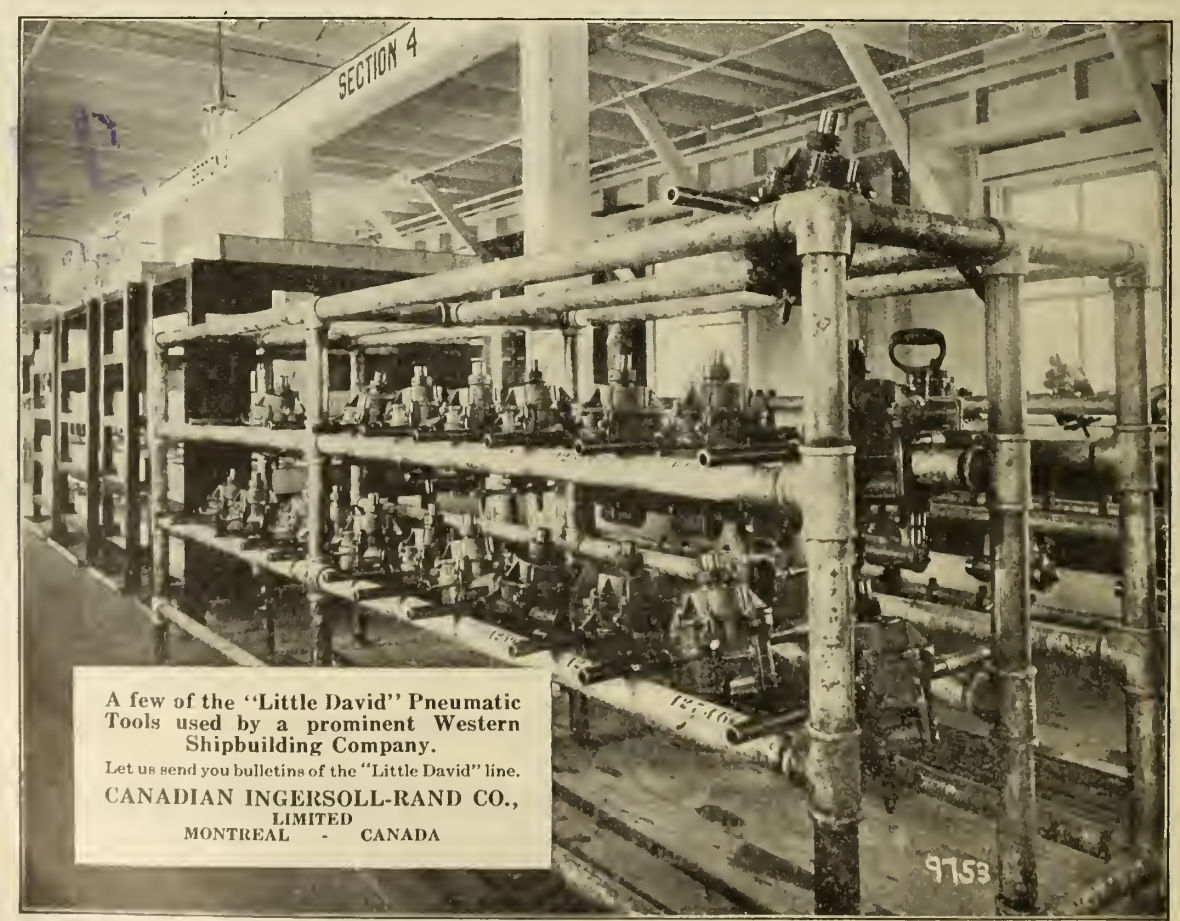
Fabrikoid offers you the same economies it offers your government—it is good business to accept them.

Prices and Samples on Request. A Trial Order is convincing.

Du Pont Fabrikoid Company, Wilmington, Del.

WENDELL & MACDUFFIE CO.

Railroad Department Representatives : 61 Broadway, New York



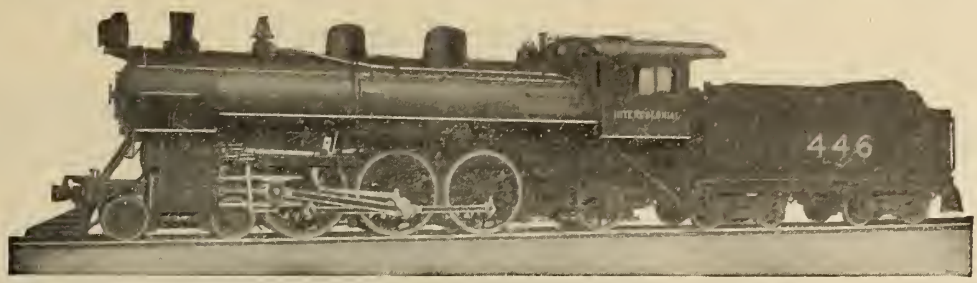
A few of the "Little David" Pneumatic Tools used by a prominent Western Shipbuilding Company.

Let us send you bulletins of the "Little David" line.

CANADIAN INGERSOLL-RAND CO., LIMITED

MONTREAL - CANADA

Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE—INTERCOLONIAL RAILWAY
Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

Montreal Locomotive Works, Limited

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

MANGANESE
Special Track Work

FOR

STEAM and ELECTRIC
RAILWAYS

We invite your enquiries for 1918 requirements.

Canadian Steel Foundries, Limited

P.O. Box 1630 - MONTREAL

Port Arthur Shipbuilding Co., Limited

Port Arthur, Canada

Designers and Builders of

STEEL SHIPS — BOILERS — ENGINES, Etc.

EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK

Dry Dock — 700 ft. x 98 ft. x 16 ft.

PLANT AT PORT ARTHUR, CANADA

In Stock for Immediate Delivery

Several 1st Class, New

CLAM SHELLS

1½ and 2 yards.

4 HOISTING ENGINES

8¼ in. x 10 in.—with Boilers.

Head Office and Plant

Port Arthur, Ontario

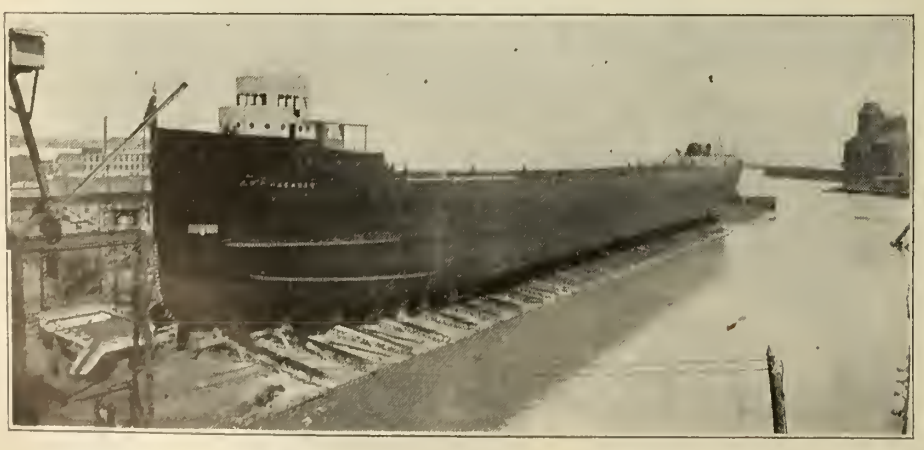
The Collingwood Shipbuilding Co.

Limited

COLLINGWOOD—ONTARIO—CANADA

Steel Ships, Engines, Boilers, Castings, and Forgings

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK



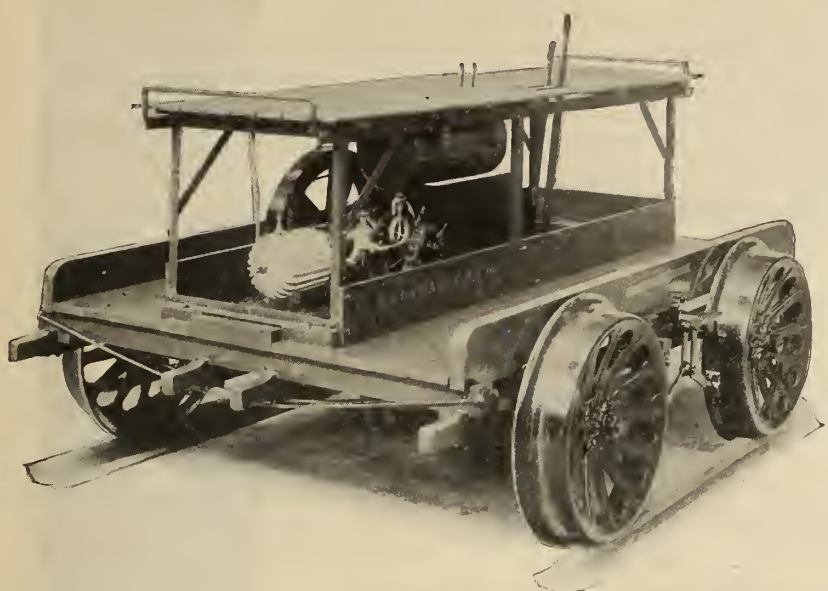
Steamer J. H. G. HAGARTY

Two Dry Docks and Shops

EQUIPPED TO OPERATE

Day or Night on Repairs

Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

Kalamazoo Railway Supply Company

KALAMAZOO, MICH., U.S.A.

Norton Jacks

For all Classes of Service

10 to 100 Tons Capacity

In Stock for Immediate Shipment.

Send for Illustrated Catalogue No. 29.

A. O. Norton, Limited

Coaticook, Prov. Que., Canada

Stock Carried by Canadian Agents: MUSSENS LIMITED
Montreal Toronto Winnipeg Cobalt Calgary Vancouver

50 YEARS IN THE BUSINESS

OVER 60,000,000 FILES A YEAR

Provide a man with good tools and you will get good results.

In files — give him one or other of the "Famous Five."

They are hard and sharp—consequently the mechanic does good work with the minimum of labour.

And that's a desirable result for all concerned.

Specify "Famous Five" when ordering. They are:

Kearney & Foot **Great Western**
American **Arcade** **Globe**

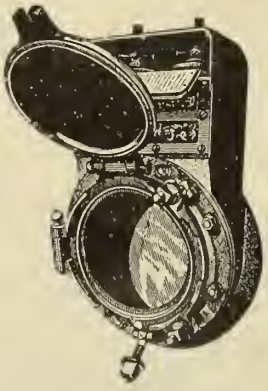
Made in Canada By

The Nicholson File Company
PORT HOPE ONTARIO

Established 1834

Fotheringham's Patent Ventilating Port

This port is designed to provide ventilation when the main frame is closed during night time or in heavy weather, and is such that even in the event of temporary immersion, water cannot enter cabin.



OPEN

Ventilation can be regulated at will, or entirely shut off by watertight covers should it be desired.

Free access to all parts is obtained through the front inspection doors.

Send for illustrated circular.

T. McAvity & Sons, Limited

BRASS and IRON FOUNDERS
Wholesale and Retail Hardware, Marine Specialties, Etc.

Cable Address
"McAvity, St. John"
Codes, A.B.C. 4th and 5th Editions

ST. JOHN, N.B., Canada

Branches at
Montreal, Toronto, Winnipeg

PREPAREDNESS—Many of our customers have been applying large numbers, and in some cases complete installations, of Tate Flexible Staybolts to their locomotive fireboxes, and thus are prepared to handle the heavy business during the present season.

THE TATE FLEXIBLE STAYBOLT has been used quite extensively since 1904 in the locomotive fire boxes, and its service records all go to prove that it has done more to improve conditions of staying and preserve the life of the firebox than any staybolt so far used.

WE RECOMMEND THIS BOLT to the railroads of Canada and to all users of the firebox type of boiler where staybolts are necessary, with the assurance that it will be found strong, serviceable, economic and most effective in reducing staybolt breakage and firebox repairs.

OVER 16,000,000 BOLTS IN SERVICE.

FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Otn.

RESULTS COUNT

That's Why 480 Railroad Shops Are Using Thermit

Thermit offers the only sure and reliable repair for locomotive frames and other heavy sections.

The superheated liquid Thermit steel is produced in bulk and poured all at once into a mold surrounding a broken section, resulting in the perfect amalgamation of the Thermit steel with the parts with which it comes in contact. The fact that those parts are first preheated, makes the weld doubly sure.

The operation of welding locomotive frames is easily accomplished, without removing the frame from position, and with very little dismantling, no matter if the frame be broken in the splice, jaw, next to the cylinder saddle, or at any other point. The engine is returned to service in from ten to twelve hours.

Hundreds of thousands of pounds of Thermit are being used annually by railroad companies in the United States and Canada.

There is only one reason for this, and that is that Thermit produces results and we all know that "results count."

Our pamphlet No. 2144 will be of interest.

All Thermit and Thermit appliances are made in our Canadian shops.

GOLDSCHMIDT THERMIT COMPANY

103 Richmond St., W., Toronto, Ont.

329-333 Folsom St., San Francisco. Equitable Bldg., 120 Broadway, New York

7300 So. Chicago Ave., Chicago

"STERLING"
HACK SAW BLADES

They are a "STERLING" product of good standard. They are made by people who know how, and are really the last word in a Hack Saw Blade. This blade is made from the best material produced by any mill, —added to this, correct mechanical construction and proper heat treatment produce a blade that is as good as is possible to turn out.

Manufactured by

Diamond Saw & Stamping Works

Buffalo, N.Y., U.S.A.

FRANKLIN AUTOMATIC FIREDOOR

KILL LAST AD.

COAL—$80 A TON IN ITALY

Coal is $80 a ton in Italy.

Yet some big engines are still wasting it with chain swung fire doors.

Big Engines with Franklin Fire Doors burn three-quarter ton less each trip.

Excluding the chilling blasts of cold air makes the difference.

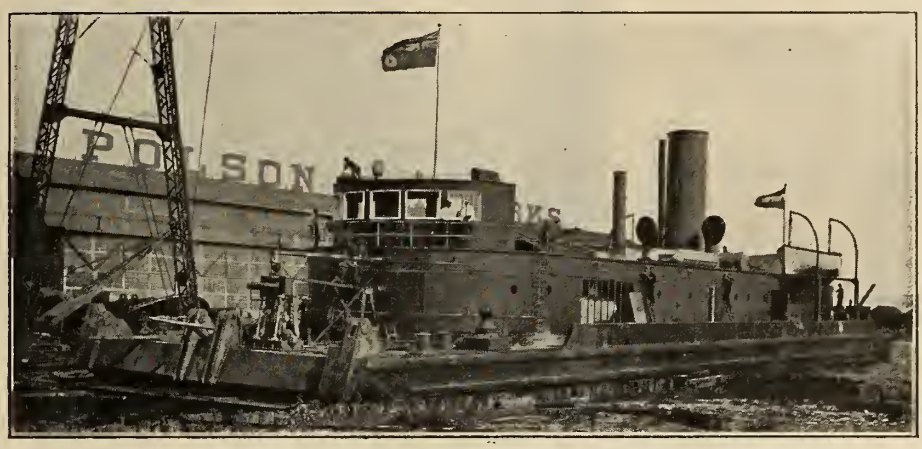
It's a paying proposition to have your automatic firedoor operate properly.

Franklin Railway Supply Company

TRANSPORTATION BLDG. MONTREAL

STEEL SHIPBUILDERS

Engineers and Boilermakers



24-inch Suction Dredge built for Canadian Government Harbor Service on Hudson Bay.
This is the second largest dredge built in Canada.

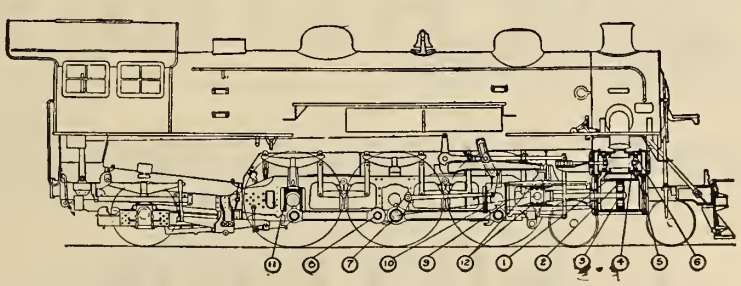
Marine Engines and Boilers, All Sizes

Polson Iron Works, Limited

Works and Office, Esplanade East, Toronto

Hunt-Spiller Gun Iron

1. Cylinder Bushings
2. Cylinder Packing
3. Pistons
4. Valve Bushings
5. Valve Packing
6. Valve Rings



7. Side Rod Bushings
8. Knuckle Pin Bushings
9. Pedestal Shoes
10. Pedestal Wedges
11. Driving Boxes
12. Crosshead Shoes

For 12 of the Principal Parts of a Locomotive

We have specialized for years on the above principal parts.

The result is not only an **Iron** which serves but a **Force** which serves as well by assisting in its economical application.

Try out

HUNT SPILLER GUN IRON

Made Only By

Hunt-Spiller Manufacturing Corporation

Office and Works, 383 Dorchester Ave., So. Boston, Mass.

W. B. LEACH, Pres. and Gen. Mgr. J. G. Platt, Vice Pres. and Sales Manager

Canadian Representatives: Canuck Supply Co., 418 St. James St., Montreal, P.Q.

Liquid Granite
FLOOR VARNISH

Is the Best Floor Varnish Made

Liquid Granite
FLOOR VARNISH

Will Stand Wear to an Unusual Degree

KILL
LAST AD.

Liquid Granite is very popular with the railway trade.
It will not crack, chip, nor peel.
It is elastic. It is durable.
As a railway general purpose varnish it has no equal.
Write our railroad department for a finished sample.
Test it any way you like.

BERRY BROTHERS
(INCORPORATED)
World's Largest Varnish Makers
WALKERVILLE, ONT.

Lengthen the Life of Metal Work

It is a hard problem to keep rust and corrosion from eating the very life out of metal structures, therefore, economy demands the best possible preventive against these destructive elements.

CARTER'S
DRY RED LEAD

gives a perfect sealing coat that absolutely protects all kinds of metals from the elements that destroy them, and immeasurably lengthens the life of Metal Work.

We make Orange Dry Lead and Litharge, Special Dry Lead and Litharge for Color, Varnish and Rubber Makers. Oxides for Potters and Storage Battery Makers.

All products are wholly Canadian made and highest standard qualities.

Ask us for quotations.

The Carter White Lead Co., Limited
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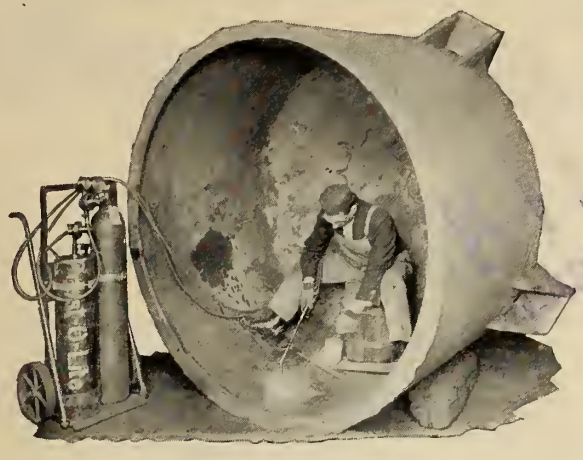

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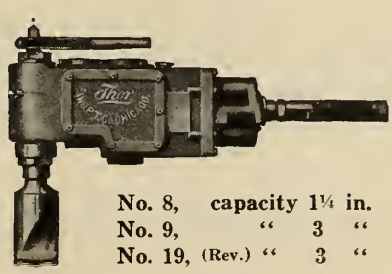

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Canadian Railway and Marine World

October, 1917.

Some Present Day Problems in Railway Maintenance Work.

By F. B. Tapley, Assistant Engineer of Maintenance, Canadian Government Railways, Moncton, N.B.

Railway maintenance, as performed by the maintenance department is a constant building up of the breaking down process caused by the wear and tear of traffic, and the effect of the elements and time. It covers a pretty broad field, embracing in its scope the roadbed, track, bridges, waterways, fences, buildings, water supply and other kindred work. The subject is too extensive to be covered, even in a general way, by one paper, so this paper will be confined to a few notes on the track structure itself, and the present day problems pertaining thereto. The track structure, as it is called, embraces the roadbed as well as the rail and ties. The roadbed and track of a railway is one of the most important parts of the complete railway structure, and may, on account of its importance, be called the backbone of the system. To keep it in good condition, the railway must provide a certain sum of money each year, have a stock of material, and a trained organization of men.

The present day tendency in Canadian railway practice is toward the large car and the long train, and, as Canada is a country of long distances, this tendency will grow. Large cars and long trains require big locomotives to haul them, and big locomotives mean more wear and tear on the track. This condition is manifesting itself at a time when material is high in price and hard to get hold of; when labor is scarce and independent in attitude; when operating costs are growing in volume; while rates, both freight and passenger, remain almost stationary. Yet the Canadian railways must have and maintain good tracks if passengers and freight are to be carried safely and expeditiously. Canada's long winter climate and short season for the carriage of water borne inland traffic places the railways in the premier position in the transportation field.

The railway maintenance men of Canada, in common with those of the rest of the continent of North America, are today facing three important problems, viz., (1) Stronger and more permanent track; (2) The obtaining and holding of labor; (3) The more economic use of material and labor. The first may be obtained in a degree by better drainage, both of the surface and under type; ballast of a better grade and more of it; heavier tie plates of the shoulder type, and the more extensive use of treated ties.

Should you ask a maintenance man what he thinks of the importance of track drainage, he will concede right off that it is one of the most important matters there is, and nine times out of ten he will tell you that the farther you keep the water away from the subgrade the better the track will be. He generally recognizes water as an enemy to be feared and guarded against, all as a matter of theory. As a matter of practice, track drainage gets secondary consideration. There are many good reasons for this. When the extra forces are put on in the spring there is great anxiety to get the ties in, the new rail laid, and the track surfaced, because the men higher up know about these things, and take a natural interest in their completion. The side ditches and other drainage work, instead of receiving first attention in the spring, are left until the last. We go into the winter with nice clean side ditches, when there is little or no water running, and through the spring and summer with dirty ditches, when it rains the greater part of the time. All this time the drains are working the moisture down into the subgrade, and storing up trouble and extra expense for cold weather. My own opinion is that we should start in the first thing in the spring and carry on the ditching work, simultaneously with the tie renewals, surfacing and other work, with extra section men specially taken on for this purpose. In this way all the work in connection with the track will be carried on in an orderly manner, and the greatest benefit derived. There are many locations where conditions must be met with drainage works of a special character, but for ordinary conditions, and ordinary conditions predominate, a good ditch well maintained is all that is required.

Ballast pits in the past have, in the majority of cases, been chosen more with a view to short haul and low cost in handling rather than to the desirability of the ballast. The result has been that a lot of fine dusty ballast has been put out, which has given us dusty track, and the money put into the venture has not proved a good investment. In the future we shall have to make a closer study of these things, and when it is not possible to obtain bank gravel of the right quality, resort to the use of broken stone or washed gravel. Ballast of this kind is bound to be high in cost, so that we shall have to be more critical of the quality of the material chosen, pay more attention to our handling methods, and see to it that the dead ballast is stripped off the roadbed so that the new ballast will not become mixed with the old.

Shoulder tie plates have proved money savers in lessening labor in holding track to gauge; and those with the canted rail seat have helped to prolong the life of the rails by adjusting the wearing surface of the railhead to conform more closely with the coning of the wheels. My own opinion is that we should lengthen the outside margin of the plate an extra inch to get more bearing on the outside, and to prevent the plate being shoved down into the tie by the crushing force of the loaded rails. This feature should prove a help on the inside of curves. The extra margin would of course, increase the weight of the plate about three-quarters of a pound, and, no doubt, it would have to be thickened slightly to make it stiffer, on account of the increased length, making the increase in weight around a full pound. The extra cost at ordinary prices would amount to about 2c each, and at present prices about 4c each. Personally, I would favor a tie plate with shallow, blunt ribs, or a smooth bottom, rather than those with deep sharp ribs, as there is less danger of the wood fibre being cut into and destroyed by rot. With a more extensive use of treated ties, which must surely take place in the future, this feature will require close attention.

Time was when the cedar tie occupied the first place in Canadian railway tracks. It was chosen because it was low in price, easy to manufacture, and resisted rot for a longer time than other woods. Under heavy loads it has not lived up to the first impression it gave, and has given out in other ways. Experience has shown that it is not so good as the harder woods for curved track, and without tie plate equipment it is very easily cut by the rail bases. This led the railways to cast around for a harder tie, and the result has been that you will see the harder woods, such as jack pine, tamarack and hemlock favored today, although the life in some respects is shorter. Oak ties are nearly out of the question in Canada, as the supply of native timber is too small, and the cost of importing too high. With the treated tie we can increase the lifetime to about 12 years, and bring into use varieties of wood which today cannot be used in the untreated state. The argument has been set forth that the treated tie showed such a small margin in saving over the untreated article that a drop of a cent or two in the price of a tie would wipe the saving out. This argument carries a good deal of weight with the powers that hand over the money, but my prediction is that the prospective future supply of ties will alter this viewpoint.

The second problem which is staring us in the face is the obtaining of labor; and the retention of it after it has been obtained is becoming a still more serious matter. It is the opinion is some quarters that wages may remain high after the war, and that there will be a scarcity of good labor. This is a reasonable view and the prophets may be right. Be that as it may, we are sure to face a labor shortage for the next three or four years. The solution of the problem would, at the first glance, appear to be to go into the market and bid up to the price the other employers of labor are offering, and take our chance of getting men. However, there are some sceptical people who will tell you that you cannot make bricks without straw, that men are scarce, and that the few who are available are offered more attractive living conditions by other branches of industry. It is true that the manufacturer and the contractor have offered higher wages and more attractive living quarters to the men than the railways have, but we can overcome this in a degree by providing better living accommodation. Railways with their commissary departments for the supply of their dining car services, should be in a

position to feed their men in a more substantial way and at a lower relative cost than they can do it themselves, or have it done for them by contractors. Better and more sanitary living quarters, combined with good food, will increase the efficiency of the worker and go a long way toward establishing a contented body of men willing to stay on the job until the work is finished. Railway maintenance work should appeal to the laborer, on account of its variety and its outdoor environment. The railways should be as keen to obtain and hold men as the contractor or manufacturer. Railway maintenance work has not in the past been regarded with favor by the better class of men. If a quick improvement in the housing and feeding conditions can be effected, then a little work by the publicity department of the railways, setting forth the attractions of railway maintenance work might work wonders. Railways buy a lot of advertising space in the daily papers, and a live advertisement once in a while, appealing to labor, would undoubtedly help. If we give our track laborers as good quarters as are enjoyed by the bridge and building men, we will have taken a long step in the right direction.

I read the other day of the experience of a prominent American railway in doing some track elevation work in a large city. It hired 2,874 laborers in six months to keep a working force of 400 men filled up. In other words they hired the men over seven times, and the average working time of each laborer amounted to a trifle over 21 days. In the same article the experience of a firm of contractors doing public work adjacent to another large city, by force account, is given. The work consisted of ordinary hand work in a lock, which is about as hard and unattractive as you could make it, yet very few changes in the working force took place, in spite of the fact that the rate of wages paid was on the whole considerably below the scale obtaining in the vicinity, and that labor agents from munitions plants endeavored to entice the workmen away by the promise of higher wages. The reasons for the successful holding of the men on the job were quite simple. The contractor saw to it at the start that comfortable buildings were provided in which to house the men, and that a supply of good food, cooked and served in the way the different nationalities desired it, was on hand. These two influences were the main things which kept the men satisfied and on the job for a year, in spite of the efforts to get them away. Keeping the men on the job has the big advantage of a larger output of work per man, and a more efficient working gang. It is obvious to anyone familiar with the various features of maintenance work that the longer a gang works together and the fewer the changes made, the more the work goes with a better swing, and a higher class of work and more of it will be turned out in the working day.

So much has been said about the vast amount of money to be saved by the care, rehabilitation and the re-use of old material, that one is prone to approach the subject with fear and trrmbling. We can, however, by a freer use of the rail saw, treat our released rails to advantage and prolong their life in branch line service. My idea would be to do the sawing work in the winter when the work is slaek, maintaining a small gang for this purpose, or the work might be carried on throughout the entire year, if there were enough of it to justify it. Take a year when main rail renewals were fairly heavy. The released rail could be sorted over, and after the main line repair rail had been set aside, the remainder could be gathered up and hauled in to the saw, there to be treated and laid in a branch track the next season. In this way we would get a pretty fair sample of branch line rail, and one calculated to last a good many years under light traffic.

Handling the rails after this fashion should not tie up cars for any great length of time, if the location of the saw were carefully chosen to provide ample piling and handling space. The work of relaying would be facilitated in the end, as holding the rails over the winter would permit of a start the first thing in the spring, instead of in the early fall, as is usually done under present methods of handling. Care should be taken to oil all bolts to be wrenched off a sufficient time in advance of the wrenching to soften the rust. As many as can should be carefully wrenched off and oiled, packed in boxes and sent into the reclaim yard, to be held there until the sawn rail goes out again. I think this way of handling bolts a better one than the usual one of putting them through the joint bars and leaving them to rust. Many bolts, which have been successfully wrenched off, have been lost because they had to be cut off from the angle bars later. In the opinion of many men, second hand bolts cannot be successfully used in relaying rail. I think this is a mistake, as they will keep tight if equipped with a good spring lock washer. Angle bars and tie plates should be similarly reserved to accompany the rail when laid.

A process for rerolling worn rails into rails of slightly lighter section, with heads of an altered shape, both symmetrical and unsymmetrical, for use on branch lines, has been patented in the United States, and several of the prominent railways over there have had some of their rails treated in this manner. In the majority of cases the alteration to the rail is so slight that the old fastenings can be used. Briefly, the process consists of a reshaping of the worn head. This process is worth looking into.

We can make better use of our locomotive cinders than we have in the past, by spreading them on the sides of new cuts and banks, where vegetation is slow to start, and the material slides. Cinders will prevent sliding to a considerable extent, and are useful in keeping down the dust. They make good ballast in rock cuts, and in other places where rails batter because of a hard, unyielding subgrade.

There is an extensive field for the introduction of motordriven section cars to convey section crews to and from their work. The time saved in pumping a hand car will, under the right kind of foreman, be used to the railway's advantage in increasing the day's output of work. Having employed the man, it is essential that he be kept working profitably and effectively during the hours of work.

I think it can be safely estimated that the use of motor-driven section cars will save one hour a day per man employed on the track section. This saving under present schedule hours will amount to about 10% of the day's work, and this time, if properly and efficiently employed, would add just so much more work to the upkeep of the track. In other words, the gain of one extra day in every ten would be made, or say three days each month. Apart from the gain in time, I believe the motor section car would help to attract men to, and hold them on the job. The railway maintenance practice of the future will bring labor saving machinery into more extensive use; the tools will be improved, so that a larger output of labor, with the same or less effort on the part of the men, will be obtained. The tendency will be towards permanency of the gangs, both section and extra; our men will be better trained by keeping them steadily employed. I believe the extra gangs will be smaller and more efficient, made so through training, and a more liberal use of labor saving machinery. The large, unwieldy, not very efficient, and wasteful extra gangs will gradually disappear.

In concluding I wish to make an appeal to the maintenance engineers of Canada for closer co-operation in the detailing of track material. The conditions on each of the various railways do not differ so widely that we cannot get together and adopt a standard to which we can all work. With one type of material in each class or weight, better deliveries and slightly lower prices from the manufacturers will be obtained, as they will be under a lighter investment expense and providing fewer machines than they are to date. With one type of bolt, spike, or angle bar, they would carry larger stocks, as they would feel more certain of a ready sale for their product, than if they waited to see which railway was going to come into the market and buy. About the only thing in railway track material which is interchangeable today is the track spike; our angle bars, bolts, and rail drilling are pretty much all different, not in any important feature, but in the little unimportant details. Yet these small differences prevent the material from interchanging.

The foregoing paper was read before the Canadian Railway Club in Montreal recently.

Set Slope Stakes a Foot Outside.

A deviation from the usual manner of setting slope stakes for railway grading has been used successfully by L. M. Mitchell, Assistant Engineer, Minneapolis & St. Louis Ry, Oskaloosa, Iowa. Instead of the stake being driven slanting at the toe of the embankment or top of the cut, it is moved out 1 ft. farther and driven down straight. Thus, each centre line stake is practically referenced by two hubs, which are much less likely to be displaced than if set at the edge of the slope. If the contractor is advised of the method of setting the stakes, it has proved easy and convenient for him to make his measurements accordingly.

The Winnipeg Traffic Club has been incorporated under the Manitoba Companies Act, with authorized capital of $5,000 in $10 shares, to establish and maintain a social club in order to promote closer relations between the shipping and travelling public and transportation interests by personal acquaintance and the friendly discussion of traffic problems. The provisional directors are: C. A. Taylor, local freight agent; D. W. Thomas, steamship company manager; P. G. Denison, traffic manager; E. W. Travis, clerk; R. K. Gemmell, railway agent, all of Winnipeg.

United States Military Transportation in France.—W. W. Atterbury, Vice-President, in charge of operation, Pennsylvania Rd., Philadelphia, Pa., has been appointed Director General of Tarnsportation for the U.S. expeditionary forces in France.

Birthdays of Transportation Men in October.

Many happy returns of the day to:

E. W. Beatty, K.C., Vice President and General Counsel, C.P.R., Montreal, born at Thorold, Ont., Oct. 16, 1877.

L. S. Brown, General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B., born at Nelson, N.B., Oct. 19, 1864.

R. A. Burford, cashier, C.P.R., ticket office, New York, N.Y., born at Brooklyn, N.Y., Oct. 4, 1878.

Lieut.-Col. G. E. Burns, ex-Freight Claims Agent, Eastern Lines, C.P.R., Montreal, now District Intelligence Officer, Military District No. 4, Montreal, born at St. Thomas, Ont., Oct. 6, 1863.

F. F. Busteed. C.E., formerly Engineer in charge of C.P.R. revision and second tracking, west of Calgary, Kamloops, B.C., born at Battery Point, Que., Oct. 10, 1858.

J. M. S. Carroll, Sales Manager, Canadian Consolidated Rubber Co., Montreal, born at Ballarat, Australia, Oct. 22, 1875.

C. E. Cartwright, M.Can.Soc.C.E., ex-Division Engineer, C.P.R. Vancouver, B.C., born at Toronto, Ont., Oct. 13, 1864.

A. F. Dion, Traffic Manager, Quebec Harbor Commission, Quebec, born at L'Islet, Que., Oct. 1, 1871.

L. V. Druce, Division Freight Agent, Grand Trunk Pacific Ry., Edmonton, Alta., born at London, Eng., Oct. 20, 1873.

C. E. Dewey, Freight Traffic Manager, G.T.R., Montreal, born at Cheshunt, Eng., Oct. 2, 1873.

C. E. Friend, General Auditor, Canadian Northern Ry., Winnipeg, born at Brighton, Eng., Oct. 12, 1871.

W. P. Fitzsimmons, Commissioner of Industries, G.T.R., Montreal, born at Detroit, Mich., Oct. 27, 1868.

C. N. Ham, Secretary, Express Traffic Association of Canada, Montreal, born at Winnipeg, Oct. 21, 1884.

G. Hodge, Assistant to General Manager, C.P.R., Montreal, born there, Oct. 2, 1874.

J. H. Hughes, Assistant Superintendent, Ottawa Division, Quebec District, C.P.R., Montreal, born at Charlottetown, P.E.I., Oct. 7, 1865.

H. Irwin, M.Can.Soc.C.E., Consulting Right of Way and Lease Agent, C.P.R., Montreal, born at Newgrove, County Down, Ireland, Oct. 27, 1847.

W. B. Johnson, Master Mechanic, District 6, Intercolonial Division, Canadian Government Railways, Truro, N.S., born there, Oct. 8, 1872.

K. deS. Joseph, Assistant Trainmaster, C.P.R., Sudbury, Ont., born at Quebec, Que., Oct. 6, 1892.

W. M. Kirkpatrick, ex-Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, now on active military service, born at Kingston, Ont., Oct. 8, 1874.

W. B. Lanigan, Assistant Freight Traffic Manager, Western Lines, C.P.R., Winnipeg, born at Three Rivers, Que., Oct. 12, 1861.

F. McDowell, Storekeeper, Canadian Northern Ry., Winnipeg, born there, Oct. 22, 1883.

Sir William Mackenzie, President, Canadian Northern Ry., Toronto, born at Kirkfield, Ont., Oct. 30, 1849.

C. Malcolm, chief clerk, Auditor of Stores and Mechanical Accounts, Alberta Division, C.P.R., Calgary, Alta., born at Tatamagouche, N.S., Oct. 18, 1881.

R. Marpole, General Executive Assistant, C.P.R., Vancouver, B.C., born in Montgomeryshire, Wales, Oct. 9, 1850.

C. R. Moore, Assistant to Vice President in charge of operation, G.T.R., Montreal, born at Hamilton, Ont., Oct. 12, 1867.

Hugh Paton, President, Shedden Forwarding Co., Montreal, born at Johnstone, Renfrew, Scotland, Oct. 5, 1852.

J. W. Porter, Chief Engineer, Hudson Bay Ry., Pas, Man., born at Aberdeen, Scotland, Oct. 15, 1877.

T. F. Rahilly, Superintendent, Algoma Eastern Ry., Sudbury, Ont., born at Diorite, Mich., Oct. 6, 1892.

H. G. Reid, Assistant Superintendent of Rolling Stock, Canadian Government Railways, Transcona, Man., born at Pembroke, Ont., Oct. 27, 1863.

A. G. Richardson, District Passenger Agent, C.P.R., Winnipeg, born at Rockford, Ill., Oct. 16, 1880.

W. S. Rollo, joint agent, G.T.R. and Central Vermont Ry., St. Johns, Que., born at Dundee, Scotland, Oct. 8, 1852.

J. K. Savage, Superintendent, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont., born at Forreston, Ill., Oct. 5, 1876.

Lord Shaughnessy, K.C.V.O., President, C.P.R., Montreal, born at Milwaukee, Wis., Oct. 6, 1853.

T. Duff Smith, Fuel Agent, Grand Trunk Pacific Ry., Winnipeg, Man., born at Barking, Essex, Eng., Oct. 2, 1868.

E. Sterling, Assistant Superintendent, Interurban Lines, British Columbia Electric Ry., New Westminster, born at Thornbury, Ont., Oct. 3, 1875.

K. Stewart, Assistant Superintendent, District 4, Intercolonial Division, Canadian Government Railways, New Glasgow, N.S., born at Little River, N.S., Oct. 21, 1868.

C. E. Stockdill, Assistant to Vice President and General Manager, Western Lines, C.P.R., Winnipeg, born at London, Ont., Oct. 25, 1881.

D. A. Story, Freight Traffic Manager, Canadian Government Railways, Moncton, N.B., born at Halifax, N.S., Oct. 26, 1853.

E. N. Todd, Division Freight Agent, Eastern Division, C.P.R., Montreal, born at Huntingdon, Que., Oct. 17, 1879.

J. H. Valleau, Secretary-Treasurer, Thousand Islands Ry. and Oshawa Ry., Gananoque, Ont., born at Selby, Ont., Oct. 14, 1889.

A. W. Wheatley, President, Lima Locomotive Corporation, Lima, Ohio, born at Ashford, Kent, Eng., Oct. 12, 1870.

The Pacific Great Eastern Railway Situation.

P. Welch, the general contractor, announced, recently, that an audit of his books had been made by chartered accountants, showing that he received $16,422,262.42 for work which cost him $13,690,394.90. This shows a profit of $2,731,867.52, and the books also show that Welch made a profit from stores and other sources of $1,081,255.08. This gross profit, the auditors find, was reinvested in various ways, including equipment and development company, with the exception of $409,000, which is on deposit in the Union Bank, and is available for the use of the government when it takes over the contract. The auditors find that Welch put $149,409.45 of his own money into the construction, and is that amount poorer than when he took the contract. The auditors also find that the P.G.E.R. Co. received as the proceeds of the provincially guaranteed bonds $19,296,886.31, all of which is accounted for, and they affirm that none of that money was used for political purposes or by appropriations in large profits.

K. Walkem, solicitor for Welch, said recently: "It is clear from a perusal of the audit report that neither P. Welch nor Foley, Welch & Stewart put the profits on the the P.G.E.R. into their pockets, but instead placed the earned profits back into the general project, in addition investing store profits and other revenue and bringing to the road in the first place about $750,000 worth of contractors' equipment, which has been used or has depreciated to the extent of $500,000. No charge was made for the use of this equipment, it is claimed. Nor did Foley, Welch & Stewart take profits from any of the sub-contracts."

Negotiations are reported to be in progress between the general contractor, the company and the government, for a settlement of the matter, and the auditors' statement referred to was made public to put the contractors' case before the public.

The Toronto, Hamilton & Buffalo Ry. and the Town of Dundas.

The question raised in committee of the whole, in the House of Commons as to the legality of the Railway Committee of the house amending an agreement made between the Hamilton and Dundas St. Ry., and the Toronto, Hamilton & Buffalo Ry., which as stated in Canadian Railway and Marine World for August, was referred to the Minister of Justice for consideration came before the house upon the Minister's report on July 27. After reciting the facts, the Minister concluded as follows: "The proposed amendment to the bill obviously would effect a material change in the terms of the original agreement, and in my opinion this is incompetent to Parliament, seeing that the Hamilton and Dundas St. Ry. is a provincial corporation and consequently that its contract rights and obligations are not within the legislative authority of Parliament."

T. J. Stewart, M.P., who had charge of the bill for the T. H. & B. Ry., said the parties had come to an understanding and he would move that sections 1 and 2, which confirmed the agreement, be struck out. This was agreed to and the bill was passed as amended, containing only two sections, enabling the company to enter into agreements under sec. 364 of the Railway Act with the Michigan Central Rd., the Canada Southern Ry. and the Grand Trunk Ry., or any of them, for a term exceeding 21 years, and to authorize the company to hold stock in any navigation or steamboat company.

The position of the T. H. & B. Ry. agreement with the H. & D. St. Ry. continues the same as it has been since the agreement was entered into, and confirmed by the Ontario Legislature. Under the agreement the T. H. & B. Ry. operates its freight traffic into the town of Dundas over the H. & D. St. Ry. tracks.

The Railways Department has sold to the Edmonton Junk Co., Edmonton, Alta., a quantity of second hand railway spikes and bolts, which were removed from the Canadian Northern and Grand Trunk Pacific Railways west of Edmonton, and which, upon inspection, were found not to be suitable for shipment with the rails and other materials for use in France.

Little Things in a Railway Office.

By Charles Dorian, Sudbury, Ont.

A bank manager, spick and span in neatness, and happy with the reflection that things were running as smoothly as a well oiled dynamo, stepped into a railway office where papers were scattered chaotically and the typewriters jarred raucously. He intended to interview the superintendent but felt instinctively that he would be sworn at.

He was agreeably surprised, of course, to find that the superintendent was the most urbane of men. The appearance of the office had undoubtedly given him the opposite impression. The unit system was in the throes of birth there. The office had just been enlarged, to take in the staffs of the superintendent, assistant superintendent, chief dispatcher, trainmaster, bridge and building master, resident engineer and roadmasters. The movement had been rigidly opposed. Each officer had grown conservative under the old system, and the habits of himself and the staff clung like barnacles. The unit system brought them into the sunlight, where the dust motes were glaringly prominent. Reductions were not made at first, because the system would automatically weed out the ones not fitted to take up the new order of things efficiently and cheerfully.

The first of the many little things to be taught them was order. One clerk had not a square inch of his desk top clear of correspondence, invoices, partly used writing paper, soiled blotters, etc. He had a ruler with a rough edge and a calendar out of date. Somehow he managed to push aside enough of the miscellany to place a dust covered typewriter into position for operation. In his erstwhile cubicle some of this litter often overflowed, but since the private offices were given over to the use of officers only, and the clerical work all done in one big office, a literal clean sweep was imminent. All papers were to be taken off desks at closing time and typewriters put away in a cabinet. The move was taken apathetically at first and it was some time before the desks were absolutely clear at closing time.

In one desk an important file was found beneath a heap of crushed papers, which brought about a further sweep. In the drawers of that desk were stowed each day's stack of unfinished work, in such a state of disorder as to require ten times the work to straighten it out. Mixed in with it were mussy carbon papers, ink stained letter heads, rubbers, pins, pencils, pens, an old cap, a pair of hair brushes—and some pills. It all reflected the state of mind of the man who sat at that desk as plainly as a littered back yard reveals the habits of the tenant. That clerk had his desk publicly cleaned out for him, papers put in order, ink stains removed from the wood, etc. But he had the wrong habits. Instinct prompted him to poke papers into the handiest receptacle, and no amount of drilling would get him to keep his surroundings clean. He had to make room for one who would.

The truly clean will not only bathe frequently, and wear neat clothes, but will contribute to the freshening of their environments. They will not leave it to the office boy to clean the ink wells, or the janitor to wipe the spots off their desks, and the floor and wall in their vinicity. They will, rather, prevent the ink spots from appearing. Cleanliness, then, was another thing to be taught that staff. The junior clerk, when running off a mimeograph, usually daubed on more ink than was necessary and spilled some on the floor. When he was compelled to clean it up once, he became more careful. It saved work for the janitor. He did not respect the janitor, but he was taught to do so. He was taught the golden rule. Another clerk had a habit of knocking his pipe against a radiator, emptying the tobacco on the floor, and after lighting up, throwing the burnt match in the same direction. This was usually in a vacant private office. Now and then a burning butt of a cigarette would be found on the edge of a desk, the resultant pyrography marring an otherwise handsome piece of furniture.

The care of office equipment was another detail, then, to be taught this errant staff. When a clerk, with a number nine boot, puts it into a waste basket, to press down the contents, the result is a requisition for a new basket. Waste baskets were, however, finally done away with. There are enough drawers in the average desk to reserve one for waste paper. Energy in an office employe is much to be desired but when it slops over it means breakages. Clumsiness in handling typewriters, telephones, filing cabinets and chairs, brings around a big repair bill. When the chief is absent there is likely to be horse play, with the usual toll of broken glass, walls and furniture.

Silence was another of the little things to invoke. Loud talking was condemned. It disturbed those who were calculating. Whistling and humming were likewise under ban. There was one clerk who invariably started off his day with a loud sneeze, and repeated it occasionally, purposely prolonging the sound. Such things as scraping a chair along the floor, when rising or sitting down, shuffling of feet, opening cabinet drawers loudly, tapping with a pencil, slapping books down hard, stamping letters on a bare desk, instead of using some kind of padding to deaden the sound, were all prominent under the old regime.

Economy had to be preached frequently. Using company's paper and envelopes for private purposes ran away with more stock than one might imagine. Pencils were made to last longer, by a system of exchange. Red carbon paper was made the standard for copies of telegrams. The long sheets were cut in two as the supplies came in, and these half sheets distributed to the clerks who were to use them. A too lavish use of carbon paper invariably resulted in much of it becoming wrinkled. As much as $2 worth of carbon paper thus spoiled was taken out of one desk. When the distribution was curtailed a saving of 75% on this item alone was noted. In taking stationery from the cabinet where it was kept, it was noticed that some clerks would turn over several packages to get something choice, leaving behind bruised and torn paper. It was the habit of stenographers to throw into the waste basket letterheads and the two accompanying sheets which made up the office record, if they happened to make a typographical error. This was changed. The two under sheets when reversed could be used again and the letterhead saved to be used for memorandum paper. Forms that had served their purpose, or grown obsolete, were used for scribbling paper. Thus the stationery bill was cut 50%.

Economy in other things came in due course. An electric light was found burning at 8 a.m., had been burning all night, was passed between dark and daylight by at least a dozen employes—and only the last one thought of turning it out. Wasting time is something that only the very conscientious will not do, but when it comes to placing a magazine in the centre drawer of one's desk and snatching surreptitious glances at it, the payroll is due for another trimming. A number of little things that marked improvement would be done by some clerks instinctively, while others learned only by example.

A fountain pen should never be filled until a blotter has been placed under it to catch the possible overflow.

If papers are pinned together, the pin should be put in perpendicularly with the long side of the sheet on the left top side, so that when it is placed in the cabinet for filing it will not tear papers placed beside it. The file number should be placed in the top right corner. It can there be seen at a glance when thumbing the files.

A clerk loses time tearing sheet after sheet off a pad of paper when preparing for typing, it takes so much less time to roll the pad from the loose end back to the gummed edge, the process forcing off the gum and releasing the whole pad for instant use. Stenographers were taught to have their pencils sharpened at both ends and always to have notebook ready and dated, and to spend two minutes in the morning cleaning their typewriters. That two minutes would save two hours some day—the day of a certain big rush.

When all these details were brought out and acted upon the staff was a hundred per cent. smaller and a hundred per cent. more efficient. The bank manager dropped in one morning, six months after his first visit, just before the day's work had commenced and saw rows of shining desks, drawers closed and locked and a general air of freshness about the place. His appraisal of railway offices from that date was more complimentary.

[EDITOR'S NOTE.—The writer of the foregoing was formerly the C.P.R. Superintendent's chief clerk at Sudbury and is now in the Canadian Copper Co.'s transportation department.]

Locomotive Manufacturing at Montreal. — The American Locomotive Co.'s annual report for the year ended June 30 contains the following paragraph: "The munitions work at Richmond, Va., and Montreal, Que., will be completed in Aug. 1917. The work of restoring these plants to locomotive production uses has already been started and when completed the entire capacity of all of the company's plants will be devoted exclusively to the manufacture of locomotives, which are urgently needed abroad as a war necessity, and also by the railways of this country."

The Avon Coal Co. has been incorporated under the New Brunswick Companies Act, with a capital of $150,000, and offices in Queen's County, to carry on a coal and general mining business, and in connection therewith to construct or acquire tramways, sidings, switches, spur tracks and telegraph lines, and to own and operate steam and other vessels. The provisional directors are: S. M. Jones, Bangor, Me.; Miss A. F. Coughlan, and G. L. Dodge, St. John, N.B.

Official Evidence on the Hudson Bay Route.

W. A. Bowden, B.A.Sc., M.Can.Soc.C.E., Chief Engineer, Railways and Canals Department, Ottawa, appeared before the Dominion's Royal Commission in Ottawa recently and in response to questions by some of the commissioners gave evidence, of which the following is a summary:—

The project is designed to connect the western provinces with Europe by the most direct route. The railway makes connection with a Canadian Northern branch at Pas, Man., and runs in a direct line northeasterly to Port Nelson, at the mouth of the Nelson River. It will be 425 miles long. Track has been laid to mileage 332, where a delay results from the necessity for the construction of a rather large bridge over the Nelson River. Grading is nearly completed between the end of track and Port Nelson.

The mouth of the Nelson River is a typical estuary. The site of the terminals is about 15 miles upstream from deep water of the bay proper, and about 7 miles below the limit of tide action in the river. The range of tides is from 11 ft. at neaps to 16 ft. as extreme of ordinary spring tides. There is a deep water natural channel extending up the middle of the estuary, in which a depth of 20 ft. exists near the site of the development and a greater depth is available for the remainder of the distance to the bay. It is intended to provide a depth of 30 ft. in the immediate neighborhood of the wharves, and allow the 20 ft. to remain as the limiting depth at low tide, in the approach channel. Vessels drawing more than 20 ft. would await a suitable stage of the tide for entering or leaving. The wharves are being built near the deep water channel and are connected with the shore by a steel bridge. The cost of the enterprise is not exceeding the estimates made before construction was commenced, which were, for the railway $16,000,000, and for the harbor works and terminus at Port Nelson, including a grai nelevator, $11,000,000.

Development of the route was undertaken primarily for the transportation of grain. Neglecting all other considerations than geographical position a saving would be possible of the cost of transporting grain from the head of the Great Lakes to Montreal, for which rates vary from about 5c to 12c a bushel in different seasons of the year. Port Nelson is as near to the centres of grain production as is Fort William, and is as near to Liverpool as is Montreal. It will not be possible to give the shipper the full benefit of this saving of the haul from Fort William to Montreal, owing to the effect upon costs of the short traffic season by the Hudson Bay route, and to the special difficulties inherent to the marine end of the enterprise. Nor can it be expected that the route will have any material effect upon grain rates in general, owing to the fact that its capacity is limited. Its advantage will lie in the circumstance that while the season of operation will be short it will approximate fairly well to the most desirable period of the year. Further, in so far as the route will add to existing facilities at all, it will become an "enlargement of the spout" for the ultimate disposal of the grain, and not merely an additional channel for the conveyance of grain to an already congested seaboard.

It was formerly thought that the season of navigation opened in June or early in July. Our experience has shown that June is out of the question and also the greater part of July. The date when navigation would close was not stated definitely in early discussions. We have sent out tramp steamers as late as Oct. 23 without accident. A government survey vessel which was especially constructed for navigation in ice came out once on Nov. 1, but she reported having encountered ice which would have damaged an ordinary tramp. The close of navigation under present conditions results from the arrival at the western entrance of Hudson Strait of the Fox Channel ice. This ice starts down from the north during the summer, and the loose strings which precede the main floe usually arrive between Mansel and Coats Island about the middle of October. These strings may cause a slight delay, but are then a serious menace to navigation, as vessels may either pass around them or pass in through in a few hours. Later, heavier strings arrive. In the interest of safety we have had to act on the assumption that these block the whole western entrance of the strait, which would effectually stop navigation. We have no positive evidence on this subject. Extended observation may reveal that for some considerable further period the conditions are not insurmountable with suitable aids to navigation, such, for instance, as a wireless station at the north end of Mansel Isalnd, through which vessels could be advised of the results of observation by aeroplane as to the position of ice and open water. Such a course would be quite practicable, as the critical area is of very limited extent. Hudson Bay ice has in some seasons a bearing on the question of the date of opening navigation, but is not a factor in the matter of closing naviga-

While the grain trade was the prime motive, the possibilities of developing other traffic are not negligible. There is great promise of mining development in the territory tributary to the railway. In the Grass River region there are some good agricultural lands, but in general the country is of a muskeg character and perhaps not easily drained; while in the neighborhood of the bay the climate is probably too cold for profitable cultivation. The soil throughout is very rich. Something may be done in the export of live stock, the short route having a distinct advantage for this trade. The Hudson Bay fisheries are reported to be valuable, and will no doubt furnish some traffic. There is sufficient timber for local use in the region, but probably insufficient for the development of an export trade. Westbound imports would be coal and general merchandise.

The shipping season would cover the months of August, September and October, with the possibility of extension at the latter end, but with little hope for improvement in the opening date. The grain which would be shipped out in August would be from the crop of the preceding year, of which there is always some available at that season. During two months shipments would be made of the new crop. No arrangements were made to ensure a steamship service before commencing construction, and in my opinion none should have been made. Such arrangements would have been based upon the assumption of the worst possible conditions that might then have been anticipated, and which will probably never occur.

It is improbable that for a few years tramp steamers would utilize the route without special inducements. Nor can we hope for a just and reasonable arrangement with vessel owners for the provision of a regular line of steamers at the inception of operation. The best interests of the country, and of the route, require that, for a few years at least, vessels owned or chartered by the government should be put on and operated by the government. With these vessels the feasibility of the route could be demonstrated, after which it might be left to stand on its own merits. At any rate information would be available to form a sound basis for negotiations for further service. The trade will take some time to work up, particularly with respect to that westbound. Provision for the handling of 5,000,000 or 6,000,000 bushels of grain would probably best meet requirements at the outset. The ultimate capacity of the route would be that of the single track railway, about 50,000,000 bushels.

Our experience with respect to insurance is characteristic of the difficulties which must be overcome. In 1913 the insurance rates on vessels and cargoes for Port Nelson were guessed at, and were very high. That year two vessels were lost at the mouth of the Nelson River under circumstances which had no bearing upon merits or demerits of the route. The result, however, was that rates proposed for the following year were prohibitive, and we have operated during the past three seasons without insurance. During this time we have not met with a single accident, although in one of the seasons 38 passages through Hudson Strait were made.

The European & North American Ry.— The name of which is still maintained by a separate corporation in the state of Maine, extended from Bangor, Me., via St. John, N.B., to Shediac, N.B. The portion of the line in Maine is leased to the Maine Central Rd., while part of the Canadian section was taken over by the Canadian Government and utilized in the building of the Intercolonial Ry., and the remainder ultimately passed into C.P.R. control. The section of the line from Moncton to Shediac, 17 miles, was opened for traffic, Aug. 20, 1857, and was ultimately extended to Pointe du Chene, which was made the station for the summer steamship traffic to Prince Edward Island. A large amount of money was spent at Shediac for machine shops, deep water terminal, etc. The principal commercial business and shipping traffic, which hitherto had been conducted at Shediac Cape, nearly three miles distant, were transferred to Shediac and Point du Chene, two miles east. Later the machine shops were burned and reconstructed at Moncton, which then became the headquartesr of the system under the government ownership.

H. A. Woods, who has retired from the position of Assistant Chief Engineer, Grand Trunk Pacific Ry., and who has been on Canadian Railway and Marine World's subscription list since coming to Canada some years ago, writes from paper to be forwarded to him at that address, and says: "I shall want to keep in touch with railway matters in Canada, and I know of no better way than through your journal."

The G.T.R. has moved its San Francisco, Cal., passenger office to Monadnock Arcade, 681 Market St., from 687 Market St.

Conversion of Canadian Pacific Freight Cars.

As stated in Canadian Railway and Marine World for September, the C.P.R. is converting 336 single insulated refrigerator cars to vegetable cars, half at Angus shops, Montreal, and half at Weston shops, Winnipeg, and is also converting 1,161 steel side dump ballast cars to coal cars, and 600 stone cars to coal cars at Angus shops.

The 336 vegetable cars being converted from standard single insulated refrigerator cars are 38 ft. 8 in. long over end sills and have standard refrigerator doors. After removing the ice bunkers, floor slats and meat racks, the side and end walls are covered with refrigerator insulating paper, and on the inside of this, vertical strips are spaced about 2 ft. centres along the sides of the car. These vertical strips are 2 in. square, fastened to 1 in. blocks, providing a total of 3 in. air space. The linings on the inside of the strips conisists of ⅜ in. t. and g. insulation,, 1 layer of insulating paper and 13/16 in. standard t. and g. car lining. This inside lining extends to within 6 in. of the car floor and to within about 12 in. of the ceiling, leaving an opening at top and bottom, so that the heat, supplied from the charcoal heaters, located at the centre of the car, may be circulated freely all along the sides and ends of the load, and return to the centre of the car through a space 5½ in. high provided by a false floor, which is made of two courses of t. and g. lumber with insulating paper between. The floor is in sections, about 4 ft. wide, extending between inside linings. This permits of the floor being taken up, whenever necessary, for cleaning underneath, and for repairs to underframe, draft timber bolts, etc.

At each end of the car there is a bulkhead, just in front of the hatch opening, constructed in the same manner as the side linings. The open space, above the side lining and end bulkhead, is covered with heavy wire mesh, to prevent consignees throwing culled vegetables over into the air spaces. At the bulkhead this mesh also prevents theft through the hatch opening. Hatch openings are equipped with standard insulated plugs, attached to chains, so that they can be lowered into the space back of the bulkheads when the car is operating under ventilation. Hatch covers are hinged so as to open towards the centre of the car. It is believed that this arrangement provides the best distribution of fresh air throughout the interior of the car.

The heating of each car is to be accomplished by means of standard no. 2 charcoal heaters. In moderate weather one or two heaters may be used in the collapsible galvanized iron heater cages attached to the inside of the car doors. These cages are so arranged that, when the heater requires to be recharged with fuel, it is not necessary to enter the car, and the exchange of air from the outside to the inside of the car is reduced to a minimum by one side of the heater cage being secured in a position to close the aperture of the open car door in much the same manner as revolving doors in public buildings. In severe weather additional heaters may be used suspended from the ceiling from substantial fastenings provided for the purpose.

The company has 1,161 50-ton steel side dump ballast cars that are to be fitted with end gates and extension sides so as to carry their maximum tonnage in bituminous coal. The extension sides consist of planks, 30 in. high, secured to stakes that pass through openings in the top channel of the steel side construction, and secured at the bottom in malleable blocks provided for the purpose. To prevent the wooden sides bulging near the centre of the car, tie rods are provided, reinforced against bending, by means of a cross timber, 3 x 8 in., securely supported and fastened at the ends to the extension sides. In order that these cars may meet the safety appliance requirements, additional hand holds are required, and the brake mast, originally located on the corner, is removed, and a new brake mast and fittings are applied about 18 in. from the centre of the car.

Canadian Pacific Railway Honor Roll 27.

Amos, Alfred V. H.	Clerk	Vancouver	Wounded
Anderson, Henry T.	Machinist	Ogden	Wounded
Baxter, George L.	Brakeman	Lethbridge	Wounded
Bingham, William H.	Bridgeman	Sutherland	Wounded
Blakey, Harold A.	Bell boy	Victoria	Wounded
Breeze, Jack	Locomotive fireman.	Kenora	Wounded
Brundrett, Walter	Clerk	Calgary	Died of wounds
Bryan, John W.	Locomotive fireman	Strathcona	Wounded
Burns, Archibald	Brush hand	Ogden	Wounded
Campbell, R. H. M.	Checker	Smelter	Wounded
Caprani, Joseph	Carpenter	Winnipeg	Wounded
Cassidy, Patrick J.	Switchman	Brandon	Wounded
Chapman, Horace	Laborer	Angus	Wounded
Clarke, Joseph V.	Yardman	Winnipeg	Wounded
Cochrane, Robert H.	Watchman	Strassburg	Wounded
Collins, Lewis	Chef	Toronto	Killed in action
Curveon, James L.	Conductor	B. C. District	Wounded
Dallas, Donald	Conductor	Calgary	Gassed
Daly, James R.	Clerk	Maniwaki	Killed in action
Davies, Edward V. H.	Clerk	Weyburn	Wounded
Devlin, William T.	Trainman	Minnedosa	Presumed dead
Douglas, William	Checker	Coquitlam	Wounded
Eades, Robert	Constable	Montreal	Died of wounds
Ellinson, Joseph G.	Clerk	Calgary	Wounded
Farrow, Thomas	Car repairer	West Toronto	Wounded
Fergie, Richard H.	Linen handler	Winnipeg	Presumed dead
Ferguson, John	Fitter	Winnipeg	Wounded
Ferguson, Thomas	Car repairer	Place Viger	Gassed
Forrest, Thomas	Clerk	Calgary	Wounded
Gaff, Wilfred J.	Clerk	Winnipeg	Killed in action
Grant, John C.	Wiper	Swift Current	Wounded
Gray, Donald H.	Clerk	Montreal	Wounded
Hall, Samuel	Helper	Winnipeg	Believed killed
Henderson, William M.	Locomotive man	Bay Shore	Presumed dead
Herron, Jack	Tracer	Toronto	Died of wounds
Hewitt, Henry	Boilermaker	Calgary	Presumed dead
Hillman, George C.	Craneman	North Bay	Killed in action
Hook, James A.	Seaman	Victoria	Wounded
Hornsby, John	Machinist	Angus	Killed in action
Hutchinson, W. K.	Clerk	Fort William	Wounded
Irvine, Earl	Transitman	Schreiber	Wounded
Jackson, Edward J.	Blacksmith	Calgary	Presumed dead
James, Harold C.	Clerk	St. John, N.B.	Wounded
Jarvis, Arthur H.	Boilerwasher	Kenora	Wounded
Johnson, Peter	Checker	Innisfail	Wounded
Kay, John T.	Yardmaster	Medicine Hat	Wounded
Kelly, George	Chef	Vancouver	Wounded
Kelly, Michael J.	Clerk	North Bay	Wounded
Kinnear, Alfred	Helper	Angus	Wounded
Kirkbride, William B.	Wiper	Kamloops	Wounded
Kubota, James	Wiper	Swift Current	Wounded
Leslie, David	Wiper	Regina	Wounded
Lewis, Jesse S.	Operator	Moose Jaw	Wounded
Lucas, Albert J.	Fitter	Winnipeg	Wounded
McBurnie, John	Helper	Winnipeg	Killed in action
McCalden, John	Locomotive fireman	West Toronto	Wounded
McCubbin, Alexander	Apprentice	Angus	Killed in action
McDonald, John H.	Operator	Minnedosa	Wounded
McGibbon, James R.	Operator	Weyburn	Presumed dead
McGowan, Anthony	Clerk	Vancouver	Wounded
McNamee, Leslie B.	Assistant agent	Canmore	Died of wounds
McVeigh, Charles H.	Clerk	Kenora	Wounded
Mallin, Patrick	Inspector	Angus	Wounded
Miller, Harry	Stower	Calgary	Wounded
Milne, John D.	Clerk	Fort William	Presumed dead
Minshull, Charles E.	Cleaner	Montreal	Killed in action
Moir, Lyall T.	Laborer	Field	Wounded
Olden, Fred	Trimmer	Toronto	Wounded
Owens, Thomas	Apprentice	Winnipeg	Wounded
Parks, Andrew	Car repairer	Calgary	Wounded
Parnell, Harold	Trucker	Toronto	Killed in action
Paterson, John S.	Locomotive man	Winnipeg	Wounded
Pearce, Harry J. L.	Clerk	Calgary	Wounded
Pearce, Leo Elmira	Operator	Camrose	Wounded
Phipps, Frank	Checker	Midway	Wounded
Poole, John	Locomotive fireman	Kenora	Killed in action
Porritt, Stanley	Brakeman	Revelstoke	Wounded
Post, Fred	Locoomtive fireman	Havelock	Wounded
Prizeman, George A.	Cashier	Shaunavon	Killed in action
Raymer, Harold J.	Locomotive man	Weyburn	Wounded
Richards, Thomas	Car repairer	Victoria	Wounded
Roberts, George	Locomotive fireman	Calgary	Killed in action
Rumsey, Francis C.	Stenographer	Calgary	Killed in action
Salter, William	Porter	Brandon	Killed in action
Scott, Andrew	Carpenter	Ogden	Wounded
Simpson, Alexander	Punch hand	Angus	Wounded
Smith, Duncan G.	Chief clerk	Moose Jaw	Wounded
Smith, Joseph	Storekeeper	Brooks	Wounded
Summers, Charles	Waiter	Vancouver	Wounded
Surtees, Andrew	Laborer	Calgary	Killed in action
Swansborough, G. E.	Clerk	Saskatoon	Wounded
Teape, George F.	Clerk	Edmonton	Killed in action
Turner, Alfred W.	Clerk	Pembroke	Wounded
Underwood, Arthur	Laborer	Calgary	Wounded
Weber, Andrew	Trucker	Sudbury	Presumed dead
Wilson, Charles	Locomotive man	Medicine Hat	Killed in action
Wilson, Harold W.	Timekeeper	Vancouver	Wounded
Wilson, Stanley	Yardman	Lethbridge	Wounded
Wiltshire, William H.	Clerk	Montreal	Killed in action

Shown on Honor lists to date: Killed, 487; wounded, 1,064; Total, 1,551.

Special Trade Commission's Report on Transportation.

The special trade commission, which was appointed by the Dominion Government, in April, 1916, to visit Great Britain, France and Italy, to make an enquiry into the new conditions brought about by the war, and as to the possibilities for the supply of many commodities needed in Canada, and which were obtained formerly from Germany and Austria, and also to look into the question of profitable exchange with Great Britain and allied European countries, consisted of J. W. Woods, Toronto, Chairman; T. H. Wardleworth, Montreal, Vice Chairman; G. W. Allan, Winnipeg; H. E. Dupre, Quebec; W. F. Hatheway, St. John, N.B.; and F. Pauze, Montreal. The commission's report, issued recently, deals with transportation as follows:

"The commission was at every point confronted by the problem of ocean transportation. Prior to the war regular lines were running between Great Britain and Canadian ports, viz.: the Allan, C.P.R., White Star, Dominion, Canadian Northern, Donaldson, Cunard, Manchester, La Compagnie Generale Transatlantique, and La Navigazione Generale Italiana. Between France and Canada the only British line operating at the outbreak of hostilities was the Allan Line between Montreal and Havre. La Compagnie Generale Transatlantique established in 1912 between Montreal and Havre, and only ceased at the outbreak of hostilities. Communication between Italy and Canada was established by La Navigazione Generale Italiana, which ran a regular steamship line, Genoa-Canada. However, as soon as war was declared, this line was suspended. The C.P.R. also had a line running between Canada and Trieste, but naturally this service was immediately suspended on the declaration of war.

"In taking a general view of the transportation between Canada and the allied nations, it would appear that the established lines have not given that service in linking up Canada with other countries which might have been expected. It has been felt for years that the rates of freight have been of such a character as to seriously impair their usefulness as a means of developing Canadian trade. Canada's ocean transportation will have to be completely reorganized if the Dominion is to derive the fullest benefit from her natural resources and manufactured products. The question is one of such serious importance to the Dominion that the commission feels that it calls for prompt and scientific treatment by the government. It was suggested to the commission that greater use might be made of tramp steamers, but this class of vessel requires a cargo outward as well as home, and if encouraged to come to Canada, a steamer of this class is heavily penalized in the matter of insurance, particularly if the voyage is by the St. Lawrence route. As the tramp steamer forms by far the larger proportion of ocean cargo tonnage, it would appear that Imperial control centralized, say in London, might so adjust the employment of ships that the different needs of the Empire might be met as the requirements of the crop or season might demand. Mr. Pauze dissented from this. If such a mobilization of imperial transportation facilities could be achieved, it would lead to an adjustment of freight carrying which would ensure adequate return to the steamships and at the same time bring about a reduction of freight rates which would enormously assist transportation between Canada, the ports of Great Britain and the allied nations.

"In the commission's opinion the question is too important to be left to the decision of private corporations, as the future of Canada in respect to overseas trade will depend almost entirely upon the securing of favorable service and freight rates. It is to be remembered that a great number of Canada's competitors are geographically in a much better position, owing to their nearness to the markets of Great Britain and the allies, and it will be necessary to overcome this drawback if Canada is to have an important share of European trade now so freely offered to her.

"At Havre, Bordeaux, Marseilles and Genoa, the establishment of direct lines was urged as a matter of supreme importance. In the commission's opinion the service could be better rendered by the adoption of an imperial scheme of mobilization of our transportation resources. While direct lines have their advantages, it was felt that many of the subsidized lines in the past had not rendered the service which might have been expected from them. In the Italian conference which the commission held, it was pointed out that one of the assets which Italy boasted was surplus manual labor, which gave rise to the large emigration of recent years. While it is not likely that the emigration movement from Italy to Canada will assume pre-war proportions for some time to come, still, it may be reasonably expected that the movement of emigrants from Italy to Canada would in a large measure compensate for any shortage of cargo from that country to Canada on the return voyage. It may be recognized that full cargoes from both France and Italy to Canada could not always be looked for, seeing that Canadian shipments were of large bulk as a rule—lumber, wheat, etc., whereas French and Italian cargoes consisted of finer and less bulky goods.

"It may be claimed that governmental interest in transportation would encourage mainly a certain section of the community; but looked at broadly, an ocean service is simply a sort of bridge between one country and another, and while the direct benefit which may be enjoyed by one section is manifest, all sections profit by the easier and cheaper means of transit. As the conditions brought about by the war are abnormal, the commission does not wish to deal specifically with them as regards transportation. The question for the future will be the prevention of conditions which interfere with cheap and adequate distribution of Canada's products.

"The commission ventures to suggest that the question of shipbuilding in Canada should receive the government's most careful attention. It is convinced that the expansion of this industry would contribute much to the industrial welfare of Canada, and at the same time would help in some measure to provide the additional tonnage required to bring about a better condition in the matter of transportation. The commission is strongly of opinion, Mr. Hatheway dissenting, that no subsidies, bounties or other concessions should be granted to any steamship companies or to individual vessels until the whole question of transportation has been thoroughly studied, and not until the methods of moving our grain, etc., are based upon sound and scientific methods. The commission on more than one occasion in Great Britain had the question of unsatisfactory bills of lading brought to its notice. The claim was put forward that bills of lading should be uniform, that a standard should be fixed which would be equitable to the shipper and to the shipping companies. The commission feels that this subject is one of great importance and merits the careful attention of the Department of Trade and Commerce. It was suggested to the commission that an expert official should be employed by the department to advise on shipping matters, to watch freight rates, movements of shipping, and to act as general adviser to exporters and importers on all matters connected with transportation of goods by sea.

"The commission found at all shipping points in Great Britain that there was a strong desire to encourage Canadian trade. This applies perhaps with special reference to Bristol, where the dock authorities have made special provision for handling Canadian produce and welcome every indication of increased trade with Canada. Cold storage plants of the most modern type, and grain warehouses have been erected, and the commission was assured that every possible encouragement would be given to merchandise coming from the Dominion. Hull has also made special provision for Canadian trade, and would be disposed to give every possible facility for this development. Manchester importers and exporters display the keenest interest in Canadian trade and desire that the traffic between that port and the Dominion should grow. The wonderful development of the Trafford Park Estate promises to place Manchester in a unique position for handling and storing goods. London, Liverpool, Glasgow and Belfast also encourage the development of Canadian imports and exports, and are prepared to encourage to the full any efforts which are made for its expansion.

"In France the port authorities at Havre, Nantes, Bordeaux, Marseilles, all expressed the desire that trade between their ports and the Dominion should increase. At Havre, Bordeaux and Marseilles, the commission found that special provision had been made for handling cargoes such as Canada is prepared to send to France. In these ports extensive improvements were being carried out by the harbor commissioners for the purpose of extending the facilities of the ports, in the building of warehouses and providing mechanical appliances for loading and unloading vessels, so as to reduce to a minimum the time occupied in discharge and receipt of cargo. Nantes was also visited by one of the commissioners and the same evidence of good will and desire to foster the trade between Canada and France was manifest. The commissioners are now advised that a direct line has already been established between Canadian ports and Ste. Nazaire. The main port of Italy, Genoa, was visited by the commission, which found that extensive improvements are being executed in the harbor and facilities were being provided for loading and unloading, which the port has not hitherto possessed.

"The commission feels that it can only report conditions respecting freight rates as it finds them, but it would reaffirm that it believes the question is a matter of

such material importance to the country's export and import business, that it recommends as strongly as possible a complete governmental survey of the freight situation, and prompt application of such remedial measures as may be found necessary. One of the most important factors that will have to be considered by the Canadian authorities in connection with the encouragement of vessels to use the St. Lawrence route, will be the question of an improved rate of insurance. Exactly how this is to be done does not come within the province of the commission, but undoubtedly until the high rate of insurance charged on vessels coming up the St. Lawrence is remedied, there will be reluctance on the part of ship owners to send their vessels to Quebec and Montreal, as the difference in premium constitutes a serious charge on the vessel. It may, however, be suggested that the plan adopted by the British Government for controlling marine insurance rates be seriously considered by the Canadian Government. Some improvement is vital to the development of the St. Lawrence route, even if the Canadian Government has to absorb the difference between the insurance rates to Quebec and Montreal, where they are higher than those charged by insurance companies to other North Atlantic ports."

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

26442. Aug. 20.—Ordering Grand Trunk Pacific Ry. to build farm crossing for J. E. Holdcroft, McBride, B.C., at his expense.

26443. Aug. 18.—Authorizing C.P.R. to rebuild bridge 77.6 Sherbrooke Subdivision, Little Magog Lake, Que.

26444. Aug. 18.—Extending to Oct. 18 time within which bell may be installed at C.P.R. crossing at Duke St., Guelph, Ont.

26445. Aug. 18.—Authorizing C.P.R. to build spur for Canada Feldspar Corporation at mileage 22.47, Belleville Subdivision, Bathurst Tp., Ont.

26446. Aug. 18.—Authorizing C.P.R. to build spur for Grain Growers Grain Co., Ltd., at East Kildonan, Man.

26447. Aug. 18.—Authorizing London & Port Stanley Ry. to build spur on Bathurst St., London, Ont.

26448. Aug. 20.—Ordering G.T.R. to build farm crossing for G. French, McBride, B.C., at his expense.

26449. Aug. 18.—Ordering Grand Trunk Pacific Ry. in connection with application of residents of Edgerton, Alta., for overhead crossing of railway to remove material to a depth of at least 2½ ft. at northeast angle of the railway and road allowance intersection; also to take a small point off n.w., s.w. and s.e. angle of same at least 1 ft. deep.

26450. Aug. 20.—Ordering that lever operating crossing of G.T.R. and Toronto Ry. at Queen St., Toronto, be placed in electric cabin and additional signal be erected for westbound trains.

26451. Aug. 20.—Extending to Nov. 20, time in which bell may be installed at G.T.R. crossing of Riddell St., Woodstock, Ont.

26452. Aug. 20.—Approving crossing by Kettle Valley Ry. of Lake Shore Drive, Martin, Winnipeg, Brunswick, Bigsby, Bassett, Eckardt and Hastings Sts., Westminster Ave.,. and along and across Fairview Ave., between Pentiction and Coldwater Summit, B.C.

26453. Aug. 20.—Authorizing C.P.R. to build spur for Forsythe Elevator Co., Transept, Man.

26454. Aug. 20.—Extending for six months after the war, time within which Toronto, Hamilton & Buffalo Ry. shall build new bridge at King St. Hamilton, Ont., over its track, as required by order 24614, Dec. 28, 1915.

26455. Aug. 21.—Authorizing C.P.R. to build three spurs for A. McArthur & Co., Hochelaga Ward, Montreal.

26455. Aug. 21.—Authorizing C.P.R. to build revision to existing spur for Ontario Stone Corporation, Ltd., in Lot 10, Co. 4 and 5, North Orillia Tp., Ont.

26457. Aug. 9.—Ordering C.P.R. to erect class A station at Oakbank, Man.

26458. Aug.. 23.—Ordering Canadian Northern Ry. to erect 4th class station at Fairmount, Sask., and to make roadway on north side of right of way through station grounds.

26459. Aug. 23.—Directing Victoria & Sidney Ry. (G.N.R.) to divert Brooklcigh Road, Saanich District, Vancouver Island, in Sec. 57, Lake District.

26460. Aug. 18.—Ordering Canadian Northern Pacific Ry. to build transfer track with Victoria & Sidney Ry., near Sidney, B.C.

26461. Aug. 22.—Extending to Oct. 15 time within which C.P.R. shall build spur for Jas. Richardson & Sons, Port Arthur, Ont., authorized by order 26190, June 7.

26462. Aug. 22.—Extending to Oct. 22 time within which Kettle Valley Ry. may fence its right of way east of Glenfir, B.C., as required by order 26129, May 21.

26463. Aug. 23.—Authorizing Grand Trunk Pacific Ry. to build spur for David Bowman Coal & Supply Co., Winnipek.

26464. Aug. 21.—Ordering Grand Trunk Pacific Ry. to build farm crossing for T. R. Lloyd, McBride, B.C., at his expense.

26465. Aug. 24.—Approving Niagara, St. Catharines and Toronto Ry. plan showing interchange track with G.T.R., at Thorold, Ont.

26466. Aug. 20.—Amending order 26232, June 22, re opening for traffic of C.P.R. Moose Jaw Northwesterly Branch from mileage 50 to 64.5.

26467. Aug. 24.—Extending for one year from Apr. 10, 1917 time in which City of Regina, Sask., shall build bridge across C.P.R. on Hamilton St., as authorized by order 26082, Dec. 31, 1914.

26468. Aug. 25.—Authorizing G.T.R. to build certain extensions of existing sidings at Camp Borden, Ont.

26469. Aug. 25.—Authorizing C.P.R. to build loading platform and provide stock yard at Tyndall, Man.

26470, 26471. Aug. 27.—Approving Bell Telephone Co. agreements with Hazeldean Rural Telephone Co., Ltd., Carleton County, Ont., July 15, and Wright & Pontiac Telephone Co., Ottawa and Pontiac Counties, Que., Aug. 13.

26472, 26473. Aug. 28.—Extending to Oct. 15, time within which Canadian Northern Ry. shall build standard third class stations at Sibbald and Excel, Alta.

26474. Aug. 29.—Extending to Nov. 15, time within which C.P.R. shall install bell at Queen St., Guelph, Ont.

26475. Aug. 29.—Approving G.T.R. revised plan B2-53A, of station and track changes at Nelles Corners, Ont.

26476. Aug. 29.—Suspending advanced rates on pulpwood in carloads from stations on Canadian Northern Ry. to Campbellford, Ont., as published on page 3 of Supplement 20 to C.N.R. Tariff C.R.C. no. E-860, issued to become effective Sept. 1, 1917; also suspending cancellation of supplement 1 to C.N.R. tariff C.R.C. no. E-156, effective Sept 1, and ordering that rates on pulpwood published in C.N.R. tariff C.R.C. no. E-156, effective Oct. 2, 1912, be continued in effect, pending hearing by board.

26477. Aug. 29.—Approving location of Canadian Northern Ry. third class station at Palmer, Sask.

26478, 26479. Aug. 30.—Extending to Nov. 30, time within which Canadian Northern Ry. shall erect station at Stanmore, Alta., required by order 25614, Nov. 6, 1916, and also to complete erection of station at Krydor, Sask., required by order 25282.

26480. Aug. 30.—Relieving G.T.R. from providing further protection at 4th Range Crossing, 2½ miles east of Actonvale, Que.

26481. Aug. 31.—Authorizing C.P.R. to build extensions to Swift Canadian Co.'s siding at mileage 5, Galt Subdivision, Ont.

26482. Aug. 31.—Authorizing G.T.R. to build spur for Montreal Country Club, St. Bazile Parish, Que.

26483. Aug. 30.—Approving location and details of G.T.R. new station at St. Catharines, Ont., and rearrangement of sidings west of station.

26484. Aug. 28.—Approving C.P.R. plan, of Jan. 12, 1914, showing interchange tracks to be built between C.P.R. and G.T.R. at Port Hope, Ont.

26485, 26486. Aug. 27.—Authorizing Saskatchewan Government, on behalf of rural municipality of Edenwold no. 158, to build highway crossing at east end of C.P.R. station grounds, at Richardson, Sask., and on behalf of rural municipality of Montmarte no. 126, to build highway over Canadian Northern Ry., Regina-Brandon Branch, Sec. 18, Tp. 15, R. 12, West 2nd Meridian.

26487. Aug. 31.—Authorizing C.P.R. to build sidings for Northern Elevator Co., St. Boniface, Man.

26488. Aug. 31.—Extending to Sept. 30, time within which C.P.R. shall install gates at Church St., Weston, Ont.; and ordering that, pending installation of same, crossing be protected by day and night watchmen.

26489. Aug. 31.—Extending to Nov. 30, time within which Canadian Northern Ry. shall erect station at Carmel, Sask., as per order 24991, May 18, 1916.

26490. Sept. 1.—Approving agreement between Bell Telephone Co. and Sydenham Union Telephone Co., Grey County, Ont., Mar. 10, 1915.

26491. Sept. 1.—Approving clearances, shown on C.P.R. plan, of proposed hox structure for carrying pipes from old to new locomotive house at Smiths Falls, Ont.

26492. Aug. 27.—Authorizing C.P.R. to reopen highway crossing on northwest boundary and to close crossing on north boundary of Sec. 22, Tp. 29, R. 11, West 3rd Meridian.

26493. Aug. 27.—Authorizing G.T.R. to build siding for Lincoln Paper Mills Co., Merritton, Ont.

26494. Aug. 27.—Approving C.P.R. plan showing extension to spur for Gibson, McCormack, Irvin Co., West Toronto, Ont.

26495. Aug. 31.—Extending to Nov. 1, time within which Canadian Northern Ry. shall erect gates at Bay Bridge Road, Belleville, Ont., as required by order 25932, Mar. 10.

26496. Sept. 1.—Approving location and detail plans of G.T.R. new station at Scotia Jct., Ont.

26497. Sept. 5.—Authorizing C.P.R. and G.T.R. to operate trains over crossing at St. Polycarpe Jct., Que., without first stopping.

26498. Sept. 5.—Approving agreement between Bell Telephone Co. and Balsam Hill Telephone Co., Renfrew County, Ont., Aug. 25.

26499. Sept. 5.—Authorizing Grand Trunk Pacific Branch Lines Co. to open for traffic its Young to Prince Albert Branch between mileage 87 and 111.8 (Prince Albert); speed not to exceed 15 miles an hour.

26500. Sept. 5.—Extending for four months from date time within which G.T.R. shall install interlocking plant at Gilkinson St., Hamilton, Ont., as required by order 21305, Jan. 31, 1914.

26501. Sept. 5.—Authorizing Kettle Valley Ry. to build spur for F. Demuth, at mileage 27.6 west of Penticton, B.C.

26502. Sept. 6.—Approving C.P.R. plans showing layout of bridges 0.9 and 1.8, North Toronto Subdivision; and rescinding order 26073, May 1, in same connection.

26503. Sept. 5.—Relieving C.P.R. from providing further protection at crossing of Cremanze near Jacques Cartier station, Que.

26504. Sept. 7.—Approving Canadian Northern Ry. Standard Freight Tariff, C.R.C. no. W-1025, cancelling C.R.C. no W-862.

26505. Sept. 7.—Ordering C.P.R. to erect a one-pen stock yard at Enchant, Alta., to be completed by May 31, 1918.

26506. Sept. 7.—Authorizing Esquimalt & Nanaimo Ry. to build spur for Imperial Munitions Board, into Foundation Co.'s premises, on former Songhees Indian Reserve, B.C.

26507. Sept. 7.—Authorizing G.T.R. to build extension to siding for Beaver Wood Fibre Co., Thorold Tp., Ont., and approving clearances shown on plan.

26508. Sept. 7.—Authorizing Berlin & Northern Ry. to operate its cars over crossing of Louisa St., Kitchener, Ont., without first stopping; speed not to xceed 10 miles an hour; G.T.R. to stop its trains before crossing, so that tranman can operate interlocking levers.

26509. Sept. 10.—Approving agreemnt between Bell Telephone Co. and Glenview Rural Telephone Co, Lanark County, Ont., Aug. 9.

26510. Sept. 10.—Amending order 26438, Aug. 17, re C.P.R. spur for R. A. Lister & Co., Winnipeg.

26511. Sept. 10.—Approving agreement between Bell Telephone Co. and Wallingford Bros., East Templeton, Que., July 25.

26512. Sept. 5.—Approving plan of City of Lachine, Que., showing lighting Rockfield Bridge, Rockfield, Que.

26513. Sept. 10.—Authorizing C.P.R. to build spur for Nicola Branch, B.C.

26514. Sept. 11.—Authorizing G.T.R. to build spur for Canada Paper Co., Factory St., Windsor Mills, Que., and to build additional track across Factory St.

26515. Approving automatic bell installed at Grier St., Belleville, Ont., by G.T.R., and protection by watchman, during rebuilding overhead bridge on North Front St., authorized by order 26210, June 11.

26516. Sept. 13.—Authorizing C.P.R. to build spur for Reliance Investment & Developing Co., Winnipeg.

26517. Sept. 14.—Approving location of Essex Terminal Ry. from Lot 39, Con. 1, Sandwich West Tp. to northerly limit of Amherstburg, Ont., 9.3 miles.

26518. Sept. 13.—Requiring G.T.R. to erect fruit shelter, 16 x 48 ft., at east end of station platform, at Bronte, Ont., to be completed by May 1, 1918.

26519. Sept. 10.—Approving agreement between Bell Telephone Co. and Gore G. Telephone Co., Prince Edward County, Ont., July 30.

26520. Sept. 14.—Extending to Sept. 30 time within which C.P.R. shall build interchange track on Pinnacle St., Belleville, Ont., between C.N.R., C.P.R. and G.T.R., required by order 25980, March 30.

26521. Sept. 13.—Ordering C.P.R. to erect Standard 2 station at Amisk, Alta., by Sept. 1, -918.

26522. Sept. 13.—Authorizing C.P.R. to build ballast pit spur across road allowance between Secs. 26 and 27, Tp. 34, R. 26, west 2nd meridian, Sask., mileage 62.5, Sutherland Sub. Div.

26523. Sept. 13.—Authorizing C.P.R. to rebuild bridges 56.4 and 56.5, Galt Subdivision, Ontario District.

26524. Sept. 13.—Extending to Nov. 15 time within which Canadian Northern Ry. shall build station between east switch and road crossing at Kuroki, as per order 26372, July 26.

26525. Sept. 15.—Relieving Quebec & Lake St. John Ry. (C.N.R.) from providing further protection at highway at mileage 13.1 from Quebec, Que.

26526. Sept. 17.—Approving Canadian Northern plan showing transfer track between C.N.R. and C.P.R. at Rosetown, Sask.

26527. Sept. 11.—Ordering that Burwell, Adelaide and Rectory Sts., London, Ont., crossed by G.T.R., be protected by gates, operated by day and night watchmen; gates to be installed by Dec. 31, and reserving, for further consideration, uestion of apportionment of cost.

26528. Sept. 14.—Authorizing Grand Trunk Pacific Ry. to build highway over Ottawa St., Prince George, B.C.

26529. Sept. 18.—Dismissing complaint of H. E. Dumphy, Excel, Alta., against demurrage charge of $24 on car of grain.

26530. Sept. 15.—Authorizing Essex Terminal Ry. to build across certain highways between Ojibway and Anderson, and between Ojibway and Amherstburg, Ont., and across certain unopened road allowances.

26532. Sept. 14.—Authorizing C.P.R. to rebuild bridge 77.8 over Horner's Creek, Galt Subdivision, Ont.

26533. Sept. 14.—Approving clearances at New York Central Rd. mechanical coaling plant at Valleyfield, Que.

26534. Sept. 17.—Authorizing Toronto Hamilton & Buffalo Ry., to take certain lands belonging to estates of late Senator McCallum and late T. C. Street, in Sherbrooke Tp., Ont., for storage of bulk shipments of ore, coke, and coal, and for freight sheds and trackage.

26535. Sept. 17.—Relieving Windsor, Essex, & Lake Shore Rapid Ry. from providing further protection at 8th Concession road between Lots 12 and 13, Sandwich South Tp., Ont.

26536. Sept. 17.—Refusing application of residents Nepean Tp., Ont., for order directing Canadian Northern Ry. to establish flag station where is crosses forced road on Lot 17, Con. 3.

26537. Sept. 18.—Rescinding order 26249, June 18, and authorizing Village of Forres, Sask., to build highway over C.P.R. 600 ft. west of west switch at Hatton. Sask.

26538. Sept. 18.—Approving Canadian Northern Ry. Standard Howe truss plans showing 60 ft. and 120 ft. deck Howe trusses.

26539. Sept. 20.—Ordering Pere Marquette Ry. to erect station and freight shed at Tupperville, Ont., and place man in charge to sell tickets, bill out freight and express and receive same, and deliver in proper manner; to build stock yard there, suitable for two or more shippers, with loading chute at each end and separation fence in centre; all to be completed by Nov. 1.

26540. Sept. 20.—Rescinding order 26325, July 18, and authorizing Montreal & Southern Counties Ry. to resume train service in effect prior to order 26325.

26541. Sept. 20.—Authorizing Esquimalt & Nanaimo Ry. to build spur for C. Hoard, Bainbridge station, B.C.

26542. Sept. 20.—Authorizing C.P.R. to rebuilt bridge 56.6, Galt Subdivision, Ont.

26543. Sept. 19.—Authorizing Niagara, St. Catharines & Toronto Ry. to build branch line from Ontario St. to G.T.R. station at St. Catharines, Ont., to be completed within three months from date.

26544. Sept. 20.—Ordering Vancouver, Victoria & Eastern Ry. & Navigation Co. (G. H. R.) to extend bridge 528 for 42 ft. at west end, to widen channel to original width; remove gravel bar to east of bridge 530; and clean out channel from Thynne Lake to lower side of bridge 530; J. C. Thynne, Otter Valley, Merritt, B.C., to remove fish dam near outlet of Thynne Lake.

26545. Sept. 20.—Authorizing C.P.R. industrial tracks serving Gunn Packing Co., Toronto, and rescinding orders 16834, 18481, 22867, and 2336, June 21, 1912, Jan. 10. 1913, Nov. 18, 1914, and Dec. 12, 1906, approving clearances and authorizing G.T.R. to operate over said spurs.

26546. Sept. 19.—Authorizing Central Vermont Ry. to build spur for Bennett, Ltd., Chambley Tp., Que.

26547. Sept. 20.—Rescinding order 24915, Apr. 22, 1916, subject to condition that rates on wood Hawkesbury and Buckingham to destinations in pulp and sulphite pulp, from Ottawa, Hull, Central Freight Association's territory included in suspended tariffs, except Jackson, Battle Creek, Vicksburg, and Kalamazoo, Mich., be revised to basis of 19 1/10c to Chicago in accordance with established percentages; fractions of 1c in rates, excepting ½c, be eliminated as follows: under 25c drop, 25 to 74c—½c; over 74c, 1c; rates from Ottawa, Hull, Hawkesbury, and Buckingham to Jackson, Battle Creek, Vicksburg and Kalamazoo, Mich., to be made 1c less than rates from Grand Mere, Que.

26548. Sept. 19.—Ordering that rates and minimum weight to be charged by railway companies on fibreboard cheese boxes, in carloads, be those concurrently charged between same points in Canada on wooden cheese boxes, in carloads; prompt effect be given this order by amendment to Canadian freight classification, or by commodity tariff of general application.

26549. Sept. 20.—Authorizing Alberta Government to build highway over C.P.R. in n.e. ¼ Sec. 34, Tp. 24, R. 2, west of 5th Meridian.

26550. Sept. 21.—Extending to Nov. 30, time within which C.P.R. shall install gates at crossing of Church St. by G.T.R. and C.P.R. at Weston, Dnt., and that pending installation, crossing be protected by day and night watchmen.

26551. Sept. 22.—Exempting Toronto, Hamilton & Buffalo Ry. and Michigan Central Rd. from complying with conditions referred to in Sec. 364 of Railway Act, in connection with agreement of Oct. 2, 1916, between the companies, for joint use, for interchange of traffic between them, of T. H & B. R. spur between Smithville and Port Maitland, connecting with M. C. R. near Attercliffe. Ont., at Erie and Ontario Jct., and recommending agreement to Governor in council for sanction.

26552. Sept. 21.—Rescinding order 15965, Feb. 12, 1912, in so far as it exempts C.P.R. from fencing right of way from mileage 83 to 92, Bigwood Tp., Ont.; and ordering C.P.R. to fence said portion of right of way by Dec. 1.

26553. Sept. 21.—Approving Edmonton, Dunvegan & British Columbia Ry. bylaw 7. Sept. 1, and rescinding order 23459, Mar. 29, 1915.

26554. Sept. 13.—Approving plan and specifications of Blanchard Tp., Ont., showing work to be done on Bolton Drain, under G.T.R.

26555. Sept. 22.—Approving location and details of G.T.R. station at Delhi, Ont.

26556. Sept. 20.—Ordering C.P.R. to repair fences on its Kootenay Central Subdivision, B.C., mileage 10 to 166.

26557. Sept. 24.—Authorizing G.T.R. to build extension to spur for Jefferson Glass Co., Toronto.

General order 206. Sept. 7.—Amending general order 203, Aug. 11, re regulations for carriage of explosives.

Canadian Pacific Railway Construction, Betterments, Etc.

New Brunswick District.—The new locomotive house at Bay Shore, St. John, is reported to be completed, and grading on the surrounding area for additional trackage is being gone on with.

Montreal Terminals.—Four umbrella protections of reinforced concrete are being erected over the platforms at Place Viger station, Montreal. Each covering is 500 ft. long, with a spread of 20 ft., and composed of 16 central pillars, with arms stretching out to each side of the platform. The ends of the arms of each pillar are connected up with concrete beams 30 ft. long, 2 ft. wide, and 6 in. high; a similar beam connects the pillars at the centre. Cross beams of concrete, 10 ft. long, 10 in. wide and 10 in. thick are then laid transversely, on which the roof is laid. The roof slopes inward from each side to the centre and the water will be drained off by spouts placed in alternate pillars. About 300 tons of cement will be used, and the cost of the whole work is estimated at $40,000.

Ontario District.—Good progress is reported to have been made to date with the second track work on the line between Leaside Jct. and North Toronto station. The grading is comparatively light, and is being done by the company's own forces, which will also do the track laying. The heaviest part of the work is the removal of two single track steel viaducts which are being replaced by reinforced concrete structures. Each structure will be approximately 400 ft. long and 100 ft. high to base of rail; that over the belt line ravine will carry two tracks, and that over the reservoir park ravine three tracks. The first is being built by the Dominion Construction Co., and the second by Wells & Gray, Ltd. Work on both structures is well advanced and it is expected that they will be completed and ready for use by the end of November. Traffic is being carried over the ravines at present on temporary timber trestles.

The yard at West Toronto is being increased by the addition of tracks to accommodate 500 cars, thus bringing its capacity up to 2,200 cars. The biggest piece of the work is the completion of the subway at Runnymede Road. When the capacity of the yard was last increased, the substructure for a 12-track subway was put in, but the superstructure for 6 tracks only was completed. The superstructure for the additional 6 tracks is now being put in. Reinforced concrete is being used, the contractors being Archibald & Hilmer, Ltd., Toronto. The grading and track laying, with the exception of that over the subway has been completed by the company's own forces, and ballasting is being gone on with. The last extension of the yards was fully described and illustrated in Canadian Railway and Marine World, Nov. 1913, pg. 532. The present extension lies between the locomotive house built in 1913, and the old West Toronto yard.

Work has been started on a new bridge at London St., Windsor, Ont., which will be wider and of heavier construction than the old one. One third of the cost is being contributed by the city.

Grand Trunk Pacific Inspection Trip.

An official trip of inspection over the Grand Trunk Pacific Ry. was begun at Winnipeg, Sept. 14. The official party, which started from Montreal, Sept. 12, consisted of A. W. Smithers, Chairman of the Board, G.T.R.; W. Molson Macpherson, director; Jules Hone, Dominion Government representative on the directorate; H. G. Kelley, President; J. E. Dalrymple and F. Scott, Vice Presidents. The party was joined at Winnipeg by P. McAra, the other government director, and W. P. Hunter, Vice President and General Manager. Three days were spent in Winnipeg, the party leaving Sept. 17, and travelling by day in order that they might have the best opportunity of seeing the whole of the line and the country which it traverses. At Regina, Sask., on Sept. 20, the party was met by the mayor and other civic officials and was entertained at the Assiniboia Club, the ladies of the city taking charge of the ladies in the party. The principal feature of the visit was a luncheon given by the Canadian Club, at which Mr. Smithers was the chief speaker.. The party returned to the main line at Melville, Sept. 22, and proceeded westward to travel over the line to Prince Rupert, thence to Victoria, where they are expected early in October. President Kelley is making his first official trip over the line.

Canadian Northern Ry. property in Hamilton.—The assessment commissioner for Hamilton, Ont., prepared a list of properties owned by the company and its subsidiaries there showing a total assessment of lands, $247,080, and of buildings, $417,280. The taxes for this year are $9,594.44. This statement was prepared with a view of considering the city's position in regard to the taking over of the company's properties by the Dominion Government.

Consolidated Railway Bill.—The bill to consolidate and amend the Railway Act, which passed the House of Commons at the recent session, after having been considered by a special committee, did not get through the Senate before prorogation.

Mainly About Railway People Throughout Canada.

J. J. Kennedy, foreman painter, C.P.R., Lethbridge, Alta., died there Sept. 4, aged 51.

J. J. Hill, of St. Paul, Minn., left an estate which has been appraised recently at about $60,000,000.

Wm. Watson, at one time Paymaster, Toronto, Grey & Bruce Ry., died in Toronto, Aug. 31, aged 88.

E. W. Tobin, M.P. for Richmond and Wolfe, Que., began life as a railway brakeman and is now a prominent lumberman.

A. W. Smithers, Chairman of the Board, G.T.R., was in Canada during September, and toured the various lines of the system.

G. E. Johnson, who has resigned the general managership of the Cape Breton Ry., at St. Peters, N.S., after 14 years occupancy of the positioin, is now in California, on account of ill health.

Joseph Heffernan, for many years City Passenger Agent, C.P.R., and agent, Dominion Express Co., at Guelph, Ont., died there Sept. 12, aged 77.

M. P. Fennell, heretofore Assistant Secretary, Montreal Harbor Commission, is reported to have been appointed Secretary-Treasurer, vice David Seath, resigned owing to ill health.

N. R. DesBrisay, District Passenger Agent, C.P.R., St. John, N.B., was married at Halifax, N.S., Sept. 18, to Miss C. A. Worrell, daughter of the Archbishop of Nova Scotia.

R. C. Barker, agent, C.P.R., Summerland, B.C., was drowned in Okanagan Lake, Sept. 2, whilst bathing. He was formerly at North Bend and Revelstoke, B.C., as chief dispatcher.

Basil Magor, who resigned his position as Vice President and General Manager, National Steel Car Co., Hamilton, Ont., recently, has removed to New York, his new headquarters being Magor Car Corporation, 30 Church St.

Sir **Henry Drayton,** Chief Railway Commissioner, has been appointed a Royal commissioner to investigate the exportation of power generated at Niagara Falls, Ont., to the United States.

G. McL. Brown, European Manager C. P.R., has written the Tariff Reformer and Empire Monthly, in England, urging a comprehensive scheme by which returned soldiers could be placed on land.

John Harvie, of Toronto, who died at Guelph, Ont., Sept. 5, aged 85, was conductor on the first train which left Toronto on the Northern Ry., and was subsequently Traffic Master of that line.

C. W. W. Field, who has been City Passenger Agent, Grand Trunk and Central Vermont Railways at Boston, Mass., has been appointed First Lieutenant in the United States army and has trained at Plattsburg, N.Y.

H. E. Byram, Vice President in charge of Traffic, Chicago, Burlington & Quincy Rd., Chicago, Ill., is reported to have been appointed President, Chicago, Milwaukee & St. Paul Ry., Chicago, Ill., vice A. J. Earling, appointed Chairman of the Board.

H. K. Wicksteed, M.Can.Soc.C.E., who has been Chief Engineer of Surveys, Mackenzie, Mann & Co., Ltd., for a number of years, is at present acting as Manager of the Rosedale Coal and Clay Products Co., at Rosedale, Alta., which is owned by Mackenzie-Mann interests.

T. J. Oakley, who died at Toronto, Sept. 19, aged 68, was at one time dispatcher, G.T.R., Stratford, Ont., and was transferred to St. Marys, Ont., in 1907. He was later appoointed station master at Craigville, Ont., and retired from active service a few years ago.

S. J. Harrington, the Canadian Northern train dispatcher, who was arrested in connection with the accident near Edmonton, Alta., July 28, in which five persons were killed, was subsequently released on bail and later under instructions from the Attorney General's Department the proceedings were abandoned.

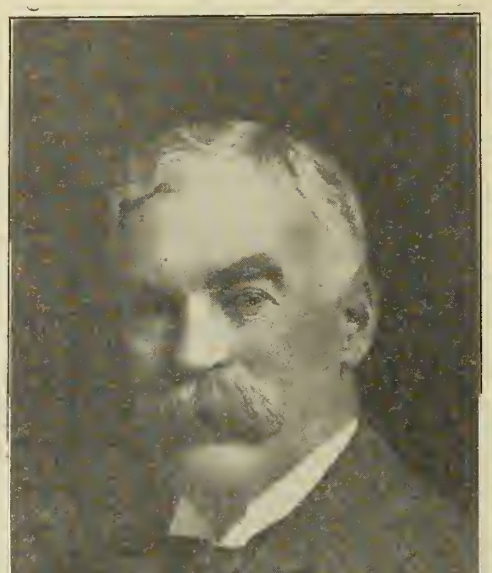
G. Morgan, who died at Blenheim, Ont., Sept. 21, aged 78, was, some years ago, engaged in railway contracting, and had contracts on the construction of the Lake Erie and Detroit River Ry., between Walkerville and St. Thomas, Ont. He also built the concrete coal docks at Rondeau, Ont., for the Lake Erie Coal Co., and did considerable bridge work on the London and Port Stanley Ry.

N. Cauchon, consulting engineer, Ottawa, who was associated with W. F. Tye, M.Can.Soc.C.E., in the preparation of a report on a combined railway entrance scheme for Hamilton, Ont., has been invited by T. H. Mawson, the English town planning engineer, who has been awarded the commission for the replanning of Saloniki, by the Greek Government, to assist him in the work.

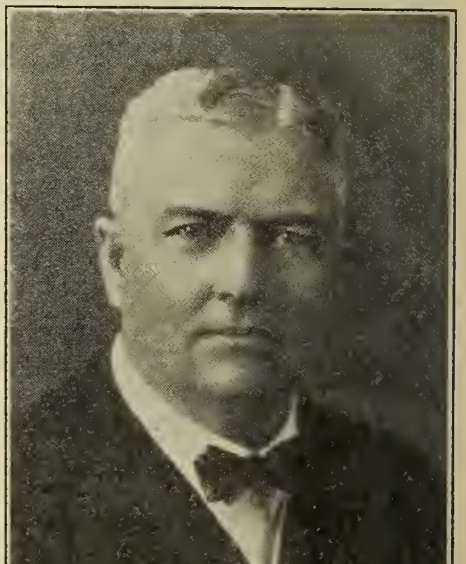
C. Manning, who has been appointed Assistant to Vice President in charge of motive power, car equipment and machinery, G.T.R., Montreal, has been in the company's service for over 30 years, latterly acting as secretary to W. D. Robb, when the latter was Superintendent of Motive Power. He has lived at Verdun, Que., for several years, and served a term as Mayor of the town.

Neil Marple, who has been appointed Master Car Builder, Canada Southern Division, Michigan Central Rd., St. Thomas, Ont., was born in McKillip Tp., Ont., July 1, 1860, and entered Michigan Central service in Dec. 1886, since when he has been, to July 1, 1888, machinist;

H. G. Kelley
President, Grand Trunk Railway and Grand Trunk Pacific Railway.



W. H. Biggar, K.C.
Vice President and General Counsel, Grand Trunk Railway and Grand Trunk Pacific Rail-



U. E. Gillen
Vice President in Charge of Operation, Grand Trunk Railway.

July 1, 1888, to April 1, 1903, Foreman of Machine Shop; April 1, 1903, to Sept. 1, 1904, also in charge of blacksmith shop; Sept. 1, 1904 to Aug. 1, 1917, General Foreman, all at St. Thomas, Ont.

Elias Stewart McMillan, who has been appointed Road Foreman of Locomotives, G.T.R., Montreal, was born there, Dec. 14, 1880, and entered G.T.R. service in July, 1897, since when he has been, to Mar. 1900, clerk; Mar. to Sept. 1900, locomotive dispatcher; Sept. 1900 to Dec. 1903, locomotive fireman; Dec. 1903 to Jan. 1917, locomotive man; Jan. to May 1917, acting travelling locomotive man; May to Sept. 1917, locomotive fireman instructor, all at Montreal.

Edwin Roy Battley, who has been appointed Master Mechanic, Eastern Lines, G.T.R., Montreal, was born at Stratford, Ont., Oct. 21, 1886, and entered G.T.R. service, Dec. 1, 1902, since when he has been, to Dec. 1, 1907, machinist apprentice, Stratford, Ont.; Dec. 1, 1907 to Jan. 1909, machinist, Stratford; Jan. 1900 to Mar. 12, 1910 to July 1, 1914, Locomotive Foreman, Fort Erie, Ont.; July 1, 1914 to Sept. 1, 1917, General Foreman, Deering, Me.

S. N. Parent, of Quebec, formerly Chairman, National Transcontinental Ry. Commissioners, and **A. B. Lowe**, the International Brotherhood of Maintenance of Way Employes' representative at Ottawa, are among the 12 persons nominated by Sir Wilfrid Laurier, as leader of the opposition, to act as members of the board of selection, to be appointed by joint resolution of both Houses of Parliament, to select members of the local appeal tribunals throughout Canada under the Military Service Act.

James E. Giles, who has been appointed Locomotive Foreman, Canadian Northern Ry., Lucerne, B.C., was born at Toronto, Jan. 18, 1882, and entered railway service in Sept. 1902, since when he has been, to 1905, machinist, Union Pacific Rd., Pocatelle, Idaho; 1905 to 1909, machinist, Northern Pacific Ry., Ellensburg, Wash.; 1900 to 1910, Assistant Locomotive House Foreman, same road, Ellensburg, Wash.; 1911 to 1913, machinist, C. P.R., Lethbridge, Alta.; 1913 to 1914, Shop Foreman, C.P.R., Lethbridge, Alta.; 1914 to 1917, acting Master Mechanic, Pacific Great Eastern Ry., Squamish, B.C.

W. D. Robb, whose appointment as Vice President in charge of motive power, car equipment and machinery, G.T.R., Montreal, was announced in our last issue, was born at Longueuil, Que., Sept. 21, 1857, and entered G.T.R. service in 1873, since when he has been, to July 1882, machinist apprentice, Montreal; July 1882 to Jan. 1883; charge hand, Montreal; Jan. to Aug. 1883, night locomotive house foreman, Montreal; Aug. 1883 to Jan. 1897, Locomotive Foreman, Belleville, Ont.; Jan. 1897 to July 1901, Master Mechanic, Toronto; July 1901 to Sept. 1, 1917, Superintendent of Motive Power, Montreal.

W. R. Davidson, who has been appointed General Superintendent, Western Lines, G.T.R., Chicago, Ill., was born at Everton, Mo., Nov. 8, 1871, and entered railway service in Jan., 1890, since when he has been, to July, 1901, operator at various points, Missouri Pacific Ry.; July, 1901, to Mar., 1904, dispatcher, same road, Wichita, Kan.; Mar. to Oct., 1904, Chief Dispatcher, same road, Wichita, Kan.; Oct., 1904, to Mar., 1911, Trainmaster, same road, Wichita, Kan.; Mar., 1911, to Feb., 1913, Trainmaster, G.T.R., London, Ont.; Feb., 1913, to Nov., 1916, Superintendent, same road, London, Ont.; Nov., 1916, to Sept. 1, 1917, Superintendent, Detroit Division, Western Lines, same road, Detroit, Mich.

Aubrey Cecil Barker, who has been appointed Assistant to General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B., was born at Lacadie, Que., Aug. 5, 1878, and entered railway service Oct. 1, 1895, since when he has been to April 1900 agent and operator at various points, Eastern Division, C.P.R.; May 1900 to Oct. 1913, dispatcher, and Chief Dispatcher, consecutively, Lake Superior Division, C.P.R., Chapleau, Ont.; Oct. 1913 to Oct. 1916, Inspector of Stations, Trains and Train Dispatching, Canadian Government Railways, Moncton, N.B. In October, 1916, he was appointed Superintendent of Telegraph and Time Service, which position he continues to fill.

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G. C. Jones
Assistant to President, Grand Trunk Railway.

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W. D. Robb
Vice President in Charge of Motive Power, Car Equipment and Machinery, Grand Trunk Railway.

Daniel Francis Coyle, who has resigned as Industrial Commissioner, Canadian Northern Ry., Winnipeg, on taking service with the Home Bank of Canada, was born at Stayner, Ont., June 13, 1875, and entered railway service, Aug. 15, 1892, since when he has been, to Sept. 1896, stenographer, General Superintendent's office, Western Division C.P.R., Winnipeg; Sept. 1896 to Aug. 15, 1901, private secretary to Manager, Western Lines, C.P.R., Winnipeg; Aug. 15, 1901 to Jan. 2, 1917, assistant to R. J. Mackenzie, who was in charge of the construction of all Canadian Northern Ry. lines west of the Great Lakes, for Mackenzie, Mann & Co., the general contractors; Jan. 2 to Sept. 30, 1917, Industrial Commissioner, Canadian Northern Ry. He was presented with a travelling case by C. N. R. officials and employes at Winnipeg recently.

Wilmer Herbert Sample, who has been appointed Superintendent of Motive Power, G.T.R., Montreal, was born at Altona, N.Y., Aug. 20, 1864, and entered railway service Aug. 20, 1882, since when he has been, to 1887, fireman, Central Vermont Ry., St. Albans, Vt.; 1887 to 1890, locomotive man, Atcheson, Topeka and Santa Fe Ry., Albuquerque, N.M.; 1890 to 1901, locomotive man, Central Vermont Ry., St. Albans, Vt.; 1901 to 1906 Road Foreman of Locomotives, Central Vermont Ry., St. Albans, Vt., 1906 to 1911, Superintendent of Motive Power and Car Department, Northern Ry. of Costa Rica (United Fruit Co.), San Jose, Costa Rica; Mar. 15, 1911 to Oct. 1914, Master Mechanic, G.T.R.; Ottawa, Oct. 1914 to Oct. 1916, Master Mechanic, G. T.R., Battle Creek, Mich.; Oct. 1916 to Sept. 1, 1917, Master Mechanic, Eastern Lines, G.T.R., Montreal.

Charles Ketchum Howard, who has been appointed General Agent, Traffic Department, Canadian Government Railways, Boston, Mass., was born at St. Andrews, N.B., Aug. 28, 1877, and entered railway service April 1893, since when he has been, to 1900, operator and agent at various points, Atlantic Division, C. P.R.; 1900 to 1901, agent, C.P.R., Brownville Jct., Me.; 1901 to 1906, agent, C.P.R. McAdam Jct, N.B.; 1906 to 1910, agent, C.P.R., Fredericton, N.B.; 1910 to 1911, Superintendent, Aroostook Valley Rd., Presque Isle, Me.; 1911 to 1912, Travelling Freight Agent, C.P.R., St. John, N.B.; 1912 to 1915, Right of Way Agent, St. John and Quebec Ry., Fredericton, N.B.; 1915 to Mar. 1916, agent, Canadian Government Railways, Woodstock, N.B.; Mar. 1916 to Sept. 1, 1917, Commercial Agent, Canadian Government Railways, Boston, Mass.

H. B. Fleming, who died suddenly at New Glasgow, N.S., Sept. 19, was born at Moncton, N.B., in 1858, and entered Intercolonial Ry. service in 1873, since when he had been, to 1874, in stationery stores; 1874 to 1878, relieving operator and station agent; 1878 to 1879, relieving dispatcher at Truro, N.S., and Moncton and Campbellton, N.B.; 1879 to 1898, dispatcher, Moncton, N.B.; 1898 to Nov. 7, 1912, Chief Dispatcher, Springhill and St. John Division; Nov. 7, 1912, to Aug., 1913, Assistant Superintendent, Division 3,

Moncton, N.B.; Aug., 1913, to Nov., 1914, Assistant Superintendent, Moncton to Edmundston, N.B., National Transcontinental Ry., Edmundston, N.B.; Nov., 1914, to Feb., 1917, Superintendent, District 5, Intercolonial Division, Canadian Government Railways, Edmundston, N.B.; Feb., 1917, he was appointed Chief Dispatcher, Canadian Government Railways, Edmundston, N.B., and latterly acted as Inspector of vision and color tests.

Ulmus E. Gillen, whose appointment as Vice President in charge of operation, G.T.R., Montreal, was announced in our last issue, and whose portrait appears in this issue, was born at Brooklyn, Mo., Feb. 27, 1867. He entered railway service in 1884, and was, to April, 1885, clerk, telegraph operator and relief agent, Chicago, Milwaukee and St. Paul Ry., Canton, S.D.; April 1885 to 1888, telegraph operator, Missouri Pacific Ry., Pacific, Mo.; 1888 to 1892, operator in dispatcher's office, same road, St. Louis, Mo.; 1892 to 1901, dispatcher, and chief dispatcher, same road, St. Louis; 1901 to 1902, Trainmaster, G.T.R. Belleville, Ont.; 1902 to 1904, Assistant Superintendent, same road, Belleville, Ont.; 1904 to 1907, Assistant Superintendent same road, London, Ont.; 1907 to 1912, Superintendent, same road, Montreal; 1913 to Sept. 1, 1917, General Superintendent, Western Lines, same road, Chicago, Ill. He was President of the G.T.R. Maintenance of Way Association for 1916, and in 1917 was elected President of the General Superintendents' Association of Chicago, and he is a member of the American Railway Engineering Association, the St. Louis Railway Club and the Traffic Club of Chicago.

Lt. Col. F. L. Lyndon, who died in Montreal, Sept. 10, aged 81, had been in C.P.R. service continuously from 1882, first in the stores department, then in the general ticket office and latterly in the General Manager's office. Both his grandfathers fought under Wellington in the Peninsular and Napoleonic wars. His father served 26 years in the 30th Regiment. He began his military career in the South Devon Militia in 1854, and later served with the Dorset Militia. In 1861 he came to Canada as a soldier, in 1866 he enlisted in the 4th Battalion of the 60th Regiment of the King's Royal Rifles. He then went to the 28th Battalion of Perth, Ont., as adjutant and instructor and subsequently moved to St. Marys, Ont., and joined the Grand Trunk Brigade. On moving to Montreal he remained with the Grand Trunk Brigade and at the time of its dissolution he assisted in re-organizing the 5th Royal Highlanders, becoming adjutant and major in that regiment. He organized and for a long period commanded the Montreal Highland Cadet Corps. He retired from the Canadian Militia Mar. 21, 1917, retaining rank as Lt. Col. He served in the Fenian raid in 1866 and had the general service medal with one clasp.

W. E. Duperow, who has been apopinted General Passenger Agent, Grand Trunk Pacific Ry., and Canadian Government Railways, Winnipeg, was born at Stratford, Ont., Sept. 4, 1872, and entered transportation service Nov. 3, 1893, since when he has been, to Oct. 15, 1894, in G.T.R. service at Seaforth, Ont.; Oct. 15, 1894 to June 1, 1896, ticket clerk, G. T.R., London, Ont.; June 1, 1896, to July 11, 1898, ticket clerk, G.T.R., Toronto; July 11, 1898, to Aug. 1, 1899, theatrical and excursion clerk, General Passenger Agent's office, G.T.R., Toronto; Aug. 1, 1899, to April 19, 1902, chief clerk, same office; April 19, 1902, to Feb. 15, 1907, General Manager, Secretary and Treasurer, Huntsville, Lake of Bays and Lake Simcoe Navigation Co., Huntsville, Ont.; Feb. 15, 1907 to June 1, 1910, Travelling Passenger Agent, G.T.R., Toronto; June

W. H. Sample
Superintendent of Motive Power, Grand Trunk Railway.

E. R. Battley
Master Mechanic, Eastern Lines, Grand Trunk Railway.

1, 1910 to April 15, 1912, City Passenger Agent, G.T.R., Toronto; June 1, 1910, to April 15, 1912, City Passenger and Ticket Agent, G.T.R. and Grand Trunk Pacific Ry., Victoria, B.C.; Apr. 15, 1912 to Mar. 1, 1914, General Agent, Passenger Department, G.T.R., G.T.P.R., and Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C.; Mar. 1, 1914, to Sept. 1, 1917, Assistant General Passenger Agent G.T.P.R., Winnipeg.

Howard G. Kelley, whose appointment as President, G.T.R. and Grand Trunk Pacific Ry., Montreal, was announced in our last issue, was born at Philadelphia, Pa., Jan. 12, 1853, and entered railway service in 1881, since when he has been, to 1884, Assistant Engineer on location, construction and bridge construction, Western and Pacific Divisions, Northern Pacific Ry.; 1884 to 1887, engaged in mining; 1887 to Jan. 1860, Resident Engineer and Superintendent of Bridges and Buildings, St. Louis Southwestern Ry. System, including the St. Louis South Western Ry. of Texas; Jan. 1890 to Mar. 1898, Chief Engineer, same road; Mar. 1898 to July 1907, Chief Engineer, Minneapolis and St. Louis Rd.; July 1900 to July 1907, also Chief Engineer, Iowa Central Ry.; Mar. 1898 to Mar. 1899, also Consulting Engineer, St. Louis South Western Ry.; July 1907 to Oct 2, 1911, Chief Engineer, G.T.R., Montreal; Oct. 2, 1911, to Sept. 1, 1917, Vice President in charge of construction, transportation and maintenance, G.T.R., Montreal. He is also a director, G.T.R., and director and Chairman of the board of the Central Vermont Ry. He is a member of the Institution of Civil Engineers of Great Britain, of the Canadian Society of Civil Engineers, and has served two terms as President of the American Railway Engineering and Maintenance of Way Association.

James Kerr McNeillie, who has been apopinted Superintendent, Susquehanna Division, Delaware and Hudson Co., Oneonta, N.Y., was born at Toronto, Feb. 23, 1874, and entered railway service in May, 1890, since when he has been, to Nov., 1891, call boy and apprentice, G.T.R., Lindsay, Ont.; Nov., 1891, to Sept. 1896, apprentice, locomotive fitter and machinist, G.T.R., Point St. Charles, Que.; Sept. 1, 1896, to Nov., 1899, trainmaster's clerk and chief clerk, Superintendent's office, C.P.R., Farnham, Que.; Nov., 1899, to June, 1902, clerk and chief clerk, General Superintendent's office, C. P.R., Winnipeg; June, 1902, to Feb., 1903, Mar. 1903 to Oct. 1907, Car Service Agent in charge of distribution of passenger equipment, C.P.R., Montreal, Que.; 1907 to July, 1908, Assistant Superintendent of Terminals, C.P.R., Toronto; July 1908, to Feb., 1909, Superintendent, District 1, Ontario Division C.P.R., Toronto; Feb., 1909, to Mar. 1911, Superintendent, District 2, Ontario Division, C.P.R., London; Mar., 1911, to Feb., 1913, Superintendent, District 1, Eastern Division C.P.R., Farnham, Que.; Feb. 1913, to June, 1914, Superintendent, District 2 (Montreal Terminals), Eastern Division, C.P.R., Montreal; June, 1914, to May, 1915, Superintendent, District 3, Eastern Division, C.P.R., Montreal; May, 1915, to Sept. 15, 1917, General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B.

Thomas King, who has been appointed Superintendent, Detroit Division, Western Lines, G.T.R., Detroit, Mich., was born at Dunbarton, Ont., July 18, 1869, and entered G.T.R. service Mar. 28, 1885, since when he has been, to Oct. 7, 1885, switch man Pickering, Ont.; Oct. 8, 1885 to Oct. 1886, operator, Sidney, Ont.; Nov. 1, 1886 to Dec. 1889, operator, York, Ont.; Jan. 1, 1890, to June 1907, operator, Don Station, Toronto; July 1, 1897 to Oct. 1898, ticket clerk, Oshawa, Ont.; Nov.

1898 to Jan. 1899, operator, Belleville, Ont.; Jan. 1890 to Aug. 1902, agent, Whitby, Ont.; Aug. 1902 to May, 1905, agent, Brockville, Ont.; May 1905 to Nov. 1907, agent, Sherbrooke, Que.; Nov. 1907 to May 1909, agent, Lewiston, Me.; May 1900 to Aug. 1910, Travelling Passenger Agent, Montreal; Aug. 1910 to Dec. 1912, agent Pontiac, Mich.; Dec. 1912 to Sept. 1, 1917, agent, Detroit, Mich.

W. H. Biggar, K.C., who has been appointed Vice President and General Counsel, G.T.R., Montreal, was born at The Carrying Place, near Trenton, Ont., Sept. 19, 1852, and was educated at the Trenton Grammar School and Upper Canada College. He began the study of law in 1875, after having for a short time engaged in commercial pursuits, and was called to the bar in 1880. He then became associated with John Bell, Q.C., then General Counsel, G.T.R., in general practice in 1881, was made a Q.C. in 1900, and was appointed Assistant General Counsel, G.T.R., Montreal, Jan. 1903, and General Solicitor, Dec. 1904, and General Counsel, G.T.R., and Grand Trunk Pacific Ry., Montreal, in Jan. 1910. In October, 1914, he was also appointed ice President, G.T.P.R. He was Mayor of Belleville, Ont., in 1887, and represented West Hastings in the Ontario Legislature from 1890 to 1897.

George C. Jones, whose appointment as Assistant to President, G.T.R., Toronto, was announced in our last issue, was born at Clyde, N.Y., Sept. 24, 1869, and entered railway service in June, 1874, since when he has been, to 1878, messenger, yard clerk and operator, consecutively, Erie Rd.; 1878 to 1887 dispatcher, Cleveland, Cincinnati, Chicago and St. Louis Ry., Erie Rd., and Chicago, Burlington and Quincy Rd., respectively, except for a short service with the Western Union Telegraph Co.; 1887 to 1896, disaptcher, chief dispatcher, and district operator, Wabash Rd.; July 1896 to Mar. 1898, Superintendent, G.T.R., London, Ont.; Mar. 1898 to May 1899, Superintendent, G.T.R. and Wabash Rd., St. Thomas, Ont.; May 1899 to Dec. 31, 1904, Superintendent, Middle Division, G.T.R., Toronto; Jan. 1, 1905 to Sept 1, 1917, General Manager, and Vice President and General Manager consecutively, Central Vermont Ry., St. Albans, Vt.

R. W. Burnett, who has been appointed Master Car Builder, Delaware and Hudson Co., Albany, N.Y., was born at Farmer City, Ill., in 1868, and entered railway service in 1890, in the Car Department, Union Pacific Rd., Denver, Col., subsequently transferring to Pennsylvania Rd. service, as Car Inspector, Chicago, Ill.; he was from Aug. 1892 to July 1890, foreman and General Foreman, consecutively, Car Department, Lake Shore and Michigan Southern Ry., Chicago, Ill., 1900, General Foreman, Car Department, Long Island Rd.; 1900 to 1904, General Foreman, Car Department, Central Rd. of New Jersey, Elizabethport, N.J.; 1904 to Jan. 1907, Assistant Master Car Builder and Master Car Builder, consecutively, Erie Rd., Meadville, Pa.; Jan. 1907, to July 1909, Assistant Master Car Builder, C.P.R., Montreal; July 1909 to Apr. 1915, General Master Car Builder, C.P.R., Montreal. Since leaving C.P.R. service, he has been Vice President, National Car Equipment Co., Chicago, Ill.

Leonard E. Ayer, who has been appointed General Agent, Canadian Northern Ry., St. Louis, Mo., was born at Henderson, Ia., Jan. 11, 1877 and entered railway service, Apr. 9, 1898, since when he has been, to Sept. 1898, student station work, Burlington and Missouri River Rd. in Nebraska, Saronville and Fairmont, Neb.; Sept. 1898 to Nov. 1900, clerk, local freight office, Burlington Route, Sioux City, Ia.; Nov. 1900 to Apr. 1902, station ticket clerk, Chicago

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J. K. McNeillie
Superintendent, Susquehanna Division, Delaware & Hudson Company.

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H. A. Woods
Ex-Assistant Chief Engineer, Grand Trunk Pacific Railway.

and North Western Ry., Sioux City, Ia.; April 1902 to Nov. 1903, station ticket clerk, same road, Ashland, Wis.; Nov. 1903 to Nov. 1907, Contracting Agent, Duluth, South Shore and Atlantic Ry., Duluth, Minn.; Nov. 1907 to Aug. 1908, agent, Minnesota and International Ry., Tenstrike, Minn.; Sept. 1908 to Mar. 1911, City Ticket Agent, Duluth, Misabe and Northern Ry., Duluth, Minn.; Mar. 1911 to Apr. 1916, chief clerk, Canadian Northern Ry., Chicago, Ill.; Apr. 1916 to Sept. 1917, Commercial Agent, same road, St. Louis, Mo.

Carl Howe, who has been appointed Traffic Manager, Michigan Central Rd., Chicago, Ill., was born at Berrien Springs, Mich., Jan. 11, 1870, and enter railway service in Oct. 1889, since when he has been, to Oct. 1890 clerk in local freight office, Michigan Central Rd., Michigan City, Ind.; Oct. 1890 to April, 1893, chief clerk and cashier, same office, April 1893 to Sept. 1894, local agent same road, Chicago Heights, Ill.; Sept. 1894 to May 1898, Travelling Freight Agent, same road, Chicago, Ill.; May 1898 to Oct. 1899, assistant chief clerk, Freight Traffic Manager's office, same road, Detroit, Mich.; Oct. 1899 to July 1900, chief clerk, same office; July 1900 to Jan. 1907, Assistant General Freight Agent, same road, Buffalo, N.Y.; Jan. to Oct. 1907, Manager, Merchants Despatch Transportation Co., New York; Oct. 1907 to Sept. 1, 1917, Manager, Merchants' Despatch and other fast freight lines, Buffalo, N.Y., and latterly, Manager, New York Central Fast Freight Lines, Chicago, Ill. He was President, Canadian Freight Association for the year 1905-6.

Lafayette S. Brown, who has been appointed General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B., was born at Nelson, N.B., Oct. 19, 1864, and entered I.R.C. service, Jan. 15, 1880, since when he has been, to Dec. 20, 1881, cleaning locomotives, and machinist helper, Newcastle, N.B.; Dec. 20, 1881, to Sept. 5, 1882, shunting in Newcastle yard and learning telegraphy; Sept. 5, 1882, to Nov. 25, 1883, assistant agent, Newcastle, N.B.; Nov. 26, 1883, to Oct. 4, 1898, train dispatcher, Moncton and Ste. Flavie District, Campbellton, N.B.; Oct. 4, 1898, to April 30, 1912, Chief Dispatcher, New Glasgow, N.S.; May 1 1912, to July 31, 1913, Assistant Superintendent, Moncton and Ste. Flavie and Fredericton to Loggieville, N.B., Newcastle, N.B.; Aug. 1, 1913, to June 1, 1917, Superintendent, Truro Sydney and Oxford District, Intercolonial Ry., latterly known as District 4, Intercolonial Division, Canadian Government Railways, New Glasgow, N.S.; June 1 to Sept. 17, 1917, Assistant General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B.

Wages of C.P.R. Station Agents, etc.—The board of conciliation appointed to enquire into the wages of the C.P.R. station agents, operators, dispatchers and linemen has recommended an increase of not less than 18% in the case of station agents, operators, relief agents and linemen, and of not less than 12% in the case of the dispatchers. It is recommended that the increases be distributed as requested by the employes, having regard to the reduction in the differential between eastern and western lines, due to the difference in the cost of living. Several of the matters brought forward by the employes have not been dealt with, being left for future negotiation between the parties concerned. The report is signed by the Chairman, Judge Gunn, of Ottawa, and by D. Campbell, Winnipeg for the men, and it is said that W. N. Tilley, K.C., Toronto, on behalf of the company, though not signing the report, is in accord with the other members.

Railway Finance, Meetings, Etc.

Atlantic, Quebec and Western Ry.—There has been deposited with the Secretary of State at Ottawa an agreement dated June 30, between the Company and E. B. Read, and F. H. Jones, relating to a supplemental trust deed modifying the trust deeds of June 26, 1905 and July 3, 1906.

Canadian Northern Ry.—Further details have been made public of an issue of $10,000,000 of C.N.R., one year 6% collateral trust notes placed on the market recently by W. A. Read & Co., New York. They are a direct obligation of the company specifically secured by the pledge of $15,333,334 C.N.R. general mortgage 4% bonds, due Sept., 1934, which have unconditional guarantees both as to principal and interest by the Government of Canada. The proceeds of the $10,000,000 notes, which are dated Sept. 1, will be used to refund $11,500,000 5% notes due that date, $1,500,000 of the maturing issue being paid from other resources. The trust deed provides for the pledge with the trustees of the same amount of collateral as now pledged for the maturing notes. The new notes will be convertible at par and interest into the pledged guaranteed bonds at 79 and interest at the option of the holder on or before June 1, 1918, on 10 days notice. The bonds acquired by this conversion on June 1 will yield more than 6%. Interest on the $10,000,000 notes is payable Mar. 1 and Sept. 1 in New York or Toronto.

There has been deposited with the Secretary of State at Ottawa duplicate original of an extension agreement, dated Aug. 20, made between the company et al and the Central Trust Co., of New York, as trustees, extending the time for payment of certain one year 5% gold notes.

Pacific Great Eastern Ry.—The annual meeting of shareholders was held at Victoria, Sept. 19, A. H. Sperry, General Manager, presiding in the absence of the President, Brigadier-General J. W. Stewart, C.M.G., on active service. Several other officials and directors were absent for a variety of causes connected with the recent action by the British Columbia Government in relation to the company's affair. The directors' report was received and adopted, and the officers and directors were re-elected. The government was not represented at the meeting, as it holds that the directors are not legally entitled to hold the shares, that they were illegally elected, and that all the proceedings at the meeting were illegal. These claims are made in the writ which the government issued against the company, and upon which proceedings are pending. The report points out that the government decided to have an audit of the com affairs, but that instead of an audit, an investigation was undertaken into the company's financial relations with the former government. The investigation, according to the report, led to some of the officials removing themselves from the investigating committee's jurisdiction rather than submit to a prying enquiry into their personal affairs. The report also states that, "paralyzed by the effects of the war and further embarrassed by the ill timed action of the government in bringing suit against your sponsors and directors for their failure to complete this contract, of which the cataclysm of war is the cause, but one course is open, which is the policy being pursued, viz., to mark time until the advent of normal conditions and the settlement of all litigous disputes."

St. Martins Ry.—The financial position of this railway is reported to be precarious. A press dispatch states that at a recent meeting an intimation was given that the Dominion Government had declined to take it over as a branch of the Intercolonial. As the line has been operated at a loss for several years, it is thought likely that the rails and other fixtures will be sold and removed and the line abandoned.

The railway was originally known as the Hampton & St. Martins Ry., and was built about 30 years ago under a charter granted by the New Brunswick Legislature. The line extends from Hampton, on the Intercolonial, to St. Martins, 30 miles, via Hammond, Titusville, Glen Titus, Upham, Hanford Road, Porter Road, Henry Lake and Quaco. Three trains a day have been operated in either direction, the principal freight being lumber. For the year ended June 30, 1916, the gross earnings were $21,506, and the net earnings, after paying operating expenses, were $918. The capital of the company is reported to be $189,000, on which no dividends have been paid for years. The President is Hon. W. E. Foster, Premier of New Brunswick.

Timiskaming & Northern Ontario Ry.—Passenger earnings for June, $58,782; freight earnings $119,131; total earnings $177,913, against $64,550 passenger earnings; $94,029 freight earnings; $159,579 total earnings, for June 1916.

Toronto, Hamilton & Buffalo Ry.—The Dominion Parliament authorized the company to enter into agreements with the Michigan Central Rd., the Canada Southern Ry. and the G.T.R., or with any one or more of them, under sec. 364 of the Railway Act, for terms exceeding 21 years, and authorizing it to take and hold stock in any navigation or steamboat company. (Aug., pg. 306.)

Toronto Terminals Ry. — The annual meeting was held in Montreal, Sept. 11. Following are the directors for the current year:: H. G. Kelley, President; Sir George Bury, Vice President; E. W. Beatty, K.C., J. E. Dalrymple, U. E. Gillen, and I. G. Ogden. The other officers are Henry Phillips, Secretary; H. E. Suckling, Treasurer; W. H. Ardley, Auditor; J. W. Leonard, General Manager.

Victoria & Sidney Ry.—A press dispatch states that $200,000 of the company's bonds, which matured Sept. 1, have not been taken up. The railway, extending from Victoria to Sidney, Vancouver Island, 17 miles, is owned by the Great Northern Ry. Co. (U.S.), and has been losing money at the rate of about $15,000 a year for several years past. The opening of the British Columbia Electric Ry.'s Saanich Peninsula branch two or or three years ago, and the recent opening of the Canadian Northern Pacific Ry. from Victoria to Patricia Bay, both parallel lines, have considerably affected the company's local business. If the G.N.R. does not come to the rescue the company will pass into the hands of a receiver and its property will be sold.

R. W. Burnett, who was appointed Master Car Builder, Delaware & Hudson Co., recently, in writing to have his address changed from Chicago to Albany, says: "I always take great interest and pleasure in reading Canadian Railway and Marine World, which you always keep up to the high standard you established several years ago."

Railway Rolling Stock Notes.

Canadian Government Railways have ordered a ditcher from F. H. Hopkins & Co.

The Toronto Hamilton and Buffalo Ry. has received 2 six wheel switching locomotives from Canadian Locomotive Co.

The Grand Trunk Pacific Ry. is reported to be asking prices for 50 or 100 refrigerator cars for passenger train service.

Canadian Car and Foundry Co. has delivered to the French State Railways, 1,000 high sided gondola cars, type L.F.C., the order for which was reecived in Mar. 1916.

The Canadian Locomotive Co. has delivered 2 consolidation locomotives to the British Government, the order for which was received through the Imperial Munitions Board.

The C.P.R., between Aug. 20 and Sept. 15, received the following additions to rolling stock: 16 steel underframe coal cars and 2 decapod locomotives, from Angus shops, and 3 vans from Winnipeg shops.

The Eastern Car Co., between Aug. 16 and Sept. 14, shipped 58 box cars, 50 tons capacity, completing order for 500 cars, for Canadian Government Railways; and 200 gondola cars, the first shipment of a second order for 1,000 similar cars, for the French State Railways.

Canadian Government Railways have received 6 refrigerator cars from Canadian Car and Foundry Co.; and the following second hand rolling stock from General Equipment Co.: 2 locomotives, 10 coal cars, 35 tons capacity; 6 coal cars, 30 tons capacity, and 11 box cars, 30 tons capacity.

The C.P.R., between Aug. 20 and Sept. 15, ordered the following rolling stock from its own shops: 10 flat cars, 6 freight refrigerator cars, from Angus shops; 7 vans, 3 single track wooden snow ploughs, 2 double track wooden snow ploughs, and 2 single track wooden flangers, from Winnipeg shops.

Fortnightly Pay Day for Railway Employes.—The Dominion Parliament has passed an act providing for the payment of salaries or wages of railway employes fortnightly instead of monthly as at present. A measure for this purpose, the Premier explained, when the bill was laid before the House of Commons, Sept. 18, had been passed by the House of Commons on a previous occasion, but had been rejected by the Senate. A bill to effect this purpose was introduced this year into the Senate, where it had been passed. On the other hand a provision to provide for payment of wages to railway men every two weeks had been incorporated in the Consolidated Railway Act, which had passed the House of Commons and was before the Senate. There was some controversy as to some of the clauses of that measure and it was therefore desirable that a special bill should be passed. The measure was passed through the committee stage, Sept. 18, and finally passed on the following day, and was assented to, Sept. 20.

Argentine Freight Rate Advances.—The privately owned railways of the Rosario district in conjunction with other lines have given notice to the Argentine Federal Railway Commission of a contemplated increase of 22% in all their tariffs to take effect Dec. 15. An increase of 10% went into effect Oct. 1, 1915. It is said that freight rates in the district average between 1.4 and 1.8c (Canadian currency) per ton mile.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Alaska Rd.—J. F. Baird, a mining engineer, who returned recently to Vancouver from Alaska, stated that 100 miles of rails were laid and that work was going right ahead. Seventy-one miles of the old Alaska Central Rd. were purchased from receivers for $1,100,000, and recently the old Tanana Valley Rd. was also acquired for purposes of connection. The government railway when completed will tap great coal beds on the Kinik Arm, Matinuska River, and will provide transportation facilities for wonderful agricultural possibilities throughout the northern regions. Efforts were being made to dredge a suitable harbor at Anchorage harbor, one of the terminals of the line at tidewater, near Seward. The railway is being built by a special commission appointed by the United States Government. (Oct., 1916, pg. 400.)

Burrard Inlet Tunnel & Bridge Co.—The annual meeting of shareholders, the majority of whom are representatives of the manufacturers surrounding the inlet, was held at North Vancouver, B.C., Sept. 13. The report of the auditors showed that since the company was incorported $115,685.44 has been expended. The company in the first instance was capitalized at $3,000,000 and of the $764,500 in shares issued, $118,000 was paid up. There is $3,025.40 remaining in the bank. The following were elected directors: Alderman Woodside, Vancouver; Alderman McBain, North Vancouver City; Councillor Maclurg, Councillor Loutet, North Vancouver district, and Carter Cotton. The official directors by virtue of office are the mayors of Vancouver and North Vancouver. the reeve of North Vancouver district and the reeve of West Vancouver. At a subsequent meeting of directors, Reeve Bridgman, North Vancouver district, was elected president; Mayor Vance, North Vancouver city, vice president. R. F. Archibald was appointed secretary. The company's charter expires in Feb., 1918, and it was decided to notify the shareholders of this fact and ask them for a definite expression of opinion as to the desirability of taking steps to have it renewed.

Cascade Scenic Ry.—The Dominion Parliament has incorporated a company with this title to acquire the rights and privileges of T. R. Deacon, Winnipeg, for the construction and operation of an incline railway up the face of Cascade Mountain, Rocky Mountain Park, Banff, Alta. The provisional directors are: T. R. Deacon, H. B. Lyall, E. J. Burleigh, J. A. McCullogh and E. Anderson, Winnipeg. (Aug., pg. 306.)

Edmonton, Dunvegan & British Columbia Ry.—The Dominion Parliament has revoted $258,797.16 as a subsidy for building a branch line from near Spirit River to and through the Grand Prairie land district, Alta., for 60 miles. The Minister of Railways stated that the revoting of this subsidy was necessary because the contractors had not fully completed the line in time for it to be inspected and paid for during the last financial year.

J. D. McArthur, President, who returned to Edmonton, Sept. 12, after a trip of inspection over the line, is reported to have said that satisfactory progress had been made during the season with the construction of the bridge over the Peace River, and that there was every prospect of its being ready for traffic by the autumn of 1918. (Mar., pg. 101.)

English Valley & Hudson Bay Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from near Brereton, Man., on the National Transcontinental Ry., to English River, Ont., between the eastern boundary of Manitoba and longitude 94, thence northerly to Hudson Bay, between the mouths of the Albany and the Nelson Rivers. The provisional directors are: J. G. G. Kerry, Toronto; H. A. Stewart, K.C., W. H. Kyle, H. A. Clark, E. L. Weatherhead, Brockville, Ont. The applicants asked to be incorporated as the English Falls & Hudson Bay Ry., but "Valley" was substituted for "Falls" in committee. (Aug., pg. 306.)

Grand Trunk Ry.—On account of the construction of the Trent Canal at Campbellford, Ont., the G.T.R. is building a new single track bridge, together with the necessary approaches, to give the clearance required for shipping. The new structure is 25 ft. south of the present bridge, with 29 ft. clearance above high water level, and consists of seven spans as follows: 4 deck plate girders, 35 ft. 4 in. each; 1 through plate girder, 98 ft. 11 in.; 2 deck plate girders, 99 ft. 8 in. each; 1 deck plate girder, 35 ft. 10 in.; total length 269 ft. 9 in. The approaches to the bridge make it necessary to raise the present embankments from 5 to 20 ft. above the present level. The abutments and piers are of concrete. The new bridge tangent will connect at the east end with the present main line by a 1° curve, and the west end will intersect the present tangent at the west end of the Campbellford yard. The approach grades to the bridge will be 0.76% and 1.5% westbound. The material for raising the embankments is being taken from the cut at the west end of the work, about half a mile from the bridge. This permits of the alignment through the cut being reduced from an 8° curve to a 1° curve. The contractors for the substructure of the bridge is the Foundation Co. of Canada. The superstructure will be built and erected by the Hamilton Bridge Co. The the removal of two single track viaducts, and track changes with company forces, under the direction of H. R. Safford, Chief Engineer, and A. S. Going, Engineer of Construction. W. G. Swartz is Resident Engineer in charge at Campbellford.

The Board of Railway Commissioners has ordered the company to put up gates, to be operated day and night, at the crossings of Burwell, Adelaide and Rectory Sts., London, Ont. (Sept., pg. 350.)

Hudson Bay Ry.—$3,000,000 chargeable to capital was voted in the House of Commons, Aug. 29, on account of construction of line, terminals and elevator on this railway. Hon. W. Pugsley raised the question whether under existing financial conditions parliament was warranted in voting such a large sum for this work. There was, he said, no immediate necessity for rushing the work to completion, especially when it was considered that before it would be used to carry on the shipment of grain, etc., there would have to be very large expenditures on terminals and for the provision of steamship lines. The Minister of Railways stated that a contract was let in the autumn of 1916 for the bridge over the Nelson River, for which $350,000 was required this year, and money was also required to complete the work already in hand. It was not proposed to go on with the terminal works at Nelson any further at present. Although the $3,000,000 was asked for, it might not be necessary to spend it all during the current financial year. (Aug., pg. 306.)

Intercolonial Ry.—Tenders are under consideration for the erection of 40,000 gal. wooden tanks at Hampton, N.B., West Bay Road, N.S., and Pugwash, N.S.

Tenders are under consideration for the construction of the substructure of a subway under three tracks at Trenton, N.S.

An agreement was reached with the Moncton City Council, Sept. 12, for the exchange of certain pieces of land in the city owned by the railway for others owned by the city. The city at the same time arranged for the construction of a spur line into the city property near the Massey-Harris building. (Aug., pg. 306.)

Lachine, Jacques Cartier and Maisonneuve Ry.—Judgment was given in a Quebec Court, Sept. 17, on the company's appeal against an award of $94,000 for land expropriated and $60,000 for damages given in the case of the Molson's Park property. The court held that as the company had offered $90,000 for the land, the award of $4,000 over that amount was not an exaggerated value. As to damages, it was held that the arbitrators had exceeded their jurisdiction, and this part of the award was quashed.

Lacombe and Blindman Valley Electric Ry.—A special meeting of shareholders was called to be held at Lacombe, Alta., Oct. 1, to authorize any modification of the existing contracts for the construction of the line; to enter into any new contracts in addition to or substitution for existing contracts; to confirm arrangements entered into with respect to financial matters; to elect directors to fill vacancies, and for other general business. J. B. McBride, Lacombe, Alta., is Secretary. Although the word "electric" is used in the title the line is to be operated by steam.

Montreal Central Terminal Co.—The Dominion Parliament has extended for five years the time within which the company may build its roadways, bridges, tunnel and terminals in Montreal and vicinity. (June, pg. 225.)

Mount McKay & Kakabeka Falls Ry.—We are officially advised that this railway extends westerly from the boundary of Fort William, Ont., for five miles, and is operated by steam. The city council has built an industrial spur line, about half a mile long, at the west end of the city to serve three elevators and some other industries. The C.P.R., the Canadian Northern Ry., the Canadian Government Rys., and the M.McK. & K.F.R. have the right to switch over this track. A proposition is under consideration to extend this spur track so as to serve various other industries and to put the whole of the interswitching work under the charge of the M.McK. & K.F.R. Sept., pg. 351.)

National Transcontinental Ry. — Sir Jas. Lougheed stated in the Senate, Sept. 4, that the cost of the N.T.R. shops at St. Malo, Que., up to Mar. 31, was $1,-872,780.32. They were not being put to any use. An enquiry had been received from the military authorities asking what it would cost to install heating and lighting systems in the shops so that they could be used to house returned soldiers, but no terms were discussed. (Mar., pg. 101.)

New Brunswick & Prince Edward Island Ry.—A press report states that 80

lb. steel rails have been laid from the car ferry terminal at Cape Tormentine, along this line to within five miles of Sackville, N.B., the point at which the line connects with the Intercolonial Ry. The report adds that all the rails available have been utilized and that it will be possible to replace the present light rails now remaining this season. (See Intercolonial Ry. Betterments, etc., June, 1916, pg. 231.)

Pacific Great Eastern Ry.—The British Columbia Minister of Finance informed the Legislature recently that $1,085,290.35 had been paid by the government on account of its guarantee of the company's bonds, viz., on account of interest, Jan. 15, $422,443.08; July 15, 423,175.01; and on account of construction, Jan. 12, $67,116.57; Jan. 22, $74,145.34; Feb. 9, $64,558.14, and Mar. 7, $33,852.21. (Sept., pg. 351.)

Prince Edward Island Ry.—The Roger Miller Co., contractors, entertained a number of Maritime Provinces business men for an inspection of the practically completed car ferry terminals at Cape Tormentine, N.B., and Port Borden, P.E.I. Sept. 7.

The car ferry reached the ferry terminal at Cape Tormentine, N.B., Sept. 17. No announcement had been made to Sept. 22 as to when the ferry service to Port Borden, P.E.I., would be started.

C. A. Hayes, General Manager, and other officials of the Canadian Government Railways, have been visiting the terminals, and arranging for the operation of the car ferry, which is undergoing an inspection at Montreal. It is expected the ferry will be put in operation Oct. 10 and that two round trips will be made every 24 hours. Freight will be transferred from the standard to the narrow gauge cars and vice versa at Port Borden. The transfer sheds for this purpose are in course of erection. (Sept., pg. 351.)

Quebec and Saguenay Ry.—The House of Commons in committee of supply on Sept. 6, passed a vote of $3,667,745.07 to provide amount required to be paid for the Quebec, Montmorency and Charlevoix Ry., the Quebec and Saguenay Ry. and the Lotbiniere and Megantic Ry., and for the equipment, appurtenances and properties used in connection with such railways, to be acquired under the authority of a statute passed at the last session; and to provide for the cost of completing, equipping and operating the said railways —the operating expenses to be chargeable to revenue.

The Minister of Railways explained that this was a revote of the unexpended portion of the $4,000,000 voted for the same purpose in 1916. The amount of money represented by the difference between the two figures had been expended upon construction work. Hon. J. D. Reid, who was Acting Minister of Railways in 1916, stated that the whole matter was thoroughly explained when the $4,000,000 vote was passed last session. The value of the three lines was left entirely to the Judge of the Exchequer Court. It was still before the judge, and upon his judgment the government must settle the matter. After the vote had been obtained the government started to finish up construction on the Quebec and Saguenay Ry. in order to prevent the work done deteriorating further. The work was put in hand and some $300,000 odd had been expended in building bridges, grading and getting the roadbed ready for laying the rails. The work of completing the line would be gone on with, and as much as is possible put in operation so as to bring in some revenue. No payments on capital cost would be made to the owners of the lines until the Exchequer Court had given final judgment. At the time of the vote in 1916, it was reported that about 80% of the grading had been completed on the Quebec and Saguenay Ry. The grading was completed practically through to Murray Bay about three months ago, but there were a few bridges to be completed. If it was possible to get rails the line would be completed this year. (June, pg. 225.)

St. John & Quebec Ry.—The Dominion Parliament has extended to Dec. 31, 1918, the time within which this company, which is owned by the New Brunswick Government, may complete the railway from Gagetown to the C.P.R., near Westfield, N.B. The subsidy agreement and the agreement for the operation of the line as a part of the Intercolonial Ry. are also similarly extended. The last mentioned agreement is to be extended only after the New Brunswick Government has assented to it. (July, pg. 274.)

Toronto Union Station.—At the Toronto Terminals Ry.'s annual meeting in Montreal recently good progress was reported on the construction of the new union station building in Toronto, which has proceeded as rapidly as supplies of construction material will permit.

Freight and Passenger Traffic Notes.

Cartage rates on competitive car load traffic in Vancouver, B.C., were cancelled Sept. 1.

Steamship fares between Vancouver and Victoria, B.C., have been increased from $2 to $2.50 single, and from $3.50 to $4.20 for the round trip.

J. Williams, of the Pacific Great Eastern Ry. passenger department, is reported to have stated in a recent interview that there had been a larger tourist traffic over the line during the summer.

A Vancouver press dispatch states that owing to a shortage of fuel oil some curtailment of train service has been made on theh C.P.R. in British Columbia, and that a further reduction is under consideration.

It is reported that arrangements are being completed under which additional coal shipments will be made to Port Stanley, from U. S. points, and thence distributed over the London and Port Stanley Ry.

The Great Lakes Express, running on the National Transcontinental Ry. between Winnipeg, Man., and Fort William, Ont., and vice versa, was taken off for the winter, east bound Sept. 13, and west bound, Sept. 14.

The gasoline car which has been operated on the Victoria and Sidney Ry., on Vancouver Island, has been sent to the United States, and a steam locomotive is being used to operate what traffic offers. The future of the line as an operating road is at present doubtful.

The Maine Central Rd. put in operation Sept. 1, an increased schedule of fares on its lines in Vermont, and New Hampshire, and on its extensions into Canada. The new rate is 2½c a mile for mileage books and 2¾c a mile for tickets, the old rates being 2¼c and 2½c respectively.

Train service in the Hudson Bay Ry. from Pas, Man., to the Nelson River, which is being given by the contractors, will, it is said, be discontinued as soon as the construction work is done for the year. Residents along the line are taking steps to have the government arrange for some service to be given during the winter.

The conference of C.P.R. Western Lines passenger officials, on winter train arrangements was held at Winnipeg, Sept. 5 to 8. Representatives of the Canadian Northern and the Grand Trunk Pacific Railways attended the meeting on the first day, to discuss matters of joint interest to the three railways.

F. W. Peters, General Superintendent, C.P.R., Vancouver, is reported to have said in an interview Sept. 15, that it was absurd to suppose that the company was opposed to the carrying of grain to Vancouver for shipment. The question of handling wheat through Vancouver was purely a matter of securing tonnage, and a reasonable ocean tariff.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from Jan. 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Increase
July	$3,834,200	$2,636,800	$1,197,400	$ 711,000
Aug.	3,684,900	2,612,900	1,072,000	614,300
Sept.	3,187,900	2,455,300	732,600	x177,300
Oct.	3,716,800	2,496,500	1,220,300	x36,700
Nov.	3,722,300	2,472,300	1,250,000	38,600
Dec.	3,485,400	2,661,600	823,800	x378,300
Jan.	2,832,600	2,350,500	482,100	226,700
Feb.	2,358,600	2,250,400	108,200	x21,200
Mar.	3,273,200	2,655,100	618,100	57200,0
Apr.	3,315.500	2,557,600	757,900	208,000
May.	3,784,700	2,730,300	1,054,400	377,290
June	4,048,600	2,961,000	1,087,600	102,600
	$41,244,700	$30,840,300	$10,404,400	$1,866,600
Incr	$7,819,700	$5,953,100	$1,866,600	.....
July	$3,844,600	$2,940,000	$904,900	x$ 292,500
Incr	$ 10,700	$ 303,200	.....	.....
Decr	.....	.....	$292,500	.....

x Decrease.

Approximate earnings for August, $3,405,000, and for three weeks ended Sept. 21, $2,237,300, against $3,684,900, and $2,102,900 for same periods 1916.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1916, from Jan. 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Increase
Jan.	10,158,307.86	7,726,829.36	2,431,478.50	341,070.27
Feb.	9,084'276.76	7,098,227.96	1,986,048.80	x308,293.94
Mar.	11,846,542.98	7,909,225.16	3,937,317.82	516,987.46
Apr.	12,355,519.60	8,180,541.98	4,174,979.62	441,241.66
May.	14,355,149.63	9,803,426.84	4,551,719.79	179,436.88
June	13,556,979.69	9,641,073.49	3,915,906.20	226,273.09
July	13,377,850.55	9,617,853.33	3,760,007.22	x257,084.51
	$84,734,637.07	$59,977,181.15	$24,757,455.95	$1,138,630.90
Inc.$	9,475,474.78	$ 8,386,843.88	$1,138,630.90	.....

x Decrease.

Approximate earnings for August, $12,023,000 and for three weeks ended Sept. 21, $8,321,000, against $12,880,000 and $8,186,000 for same periods 1916.

Grand Trunk Railway Earnings.

Aggregate traffic receipts from Jan. 1 to Aug. 31—

	1917	1916	Increase
G. T. R.	$33,936,381	$29,885,953	$4,050,428
G. T. W. R. .	6,392,338	6,269,093	123,245
D.G.H. & M.R.	2,224,632	2,210,735	13,897
Totals . . .	$42,553,351	$38,365,781	$4,187,570

Approximate earnings for three weeks ended Sept. 21, $3,955,037 against $3,840,360 for same period 1916.

Grand Trunk Pacific Ry. Earnings.

The approximate earnings of the Prairie Section, 916 miles, from July 1 to Aug. 31, were $976,829 against $693,756 for same period 1916.

Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

Arrivals in England.—Cables announce the safe arrival in England of a number of different classes of troops, including nos. 12 and 10 reinforcing draft railway troops from Prince Edward Island and Regina, Sask., respectively; forestry and railway construction draft, Camp Borden, Ont., and railway construction draft, Ottawa.

The C. P. R. and Dominion Express staffs in Great Britain before the war numbered 213, of whom 179 were of military age, and of those 158 have joined the colors.

Railway Construction. — Sir George Perley, High Commissioner for Canada in England, and Overseas Minister of Militia, on returning to London, early in September, after visiting the Canadian Army Corps in France and Belgium, stated that the railway construction and forestry corps were doing most valuable work at the front.

PERSONAL NOTES.

Eric Bate, formerly of the Canada Steamship Lines service, is reported to have been given the Military Cross in connection with the capture of Vimy Ridge.

Lieut. E. F. Ellis, Royal Field Artillery, who has been given the Military Cross, was formerly on the C.P.R. registry department's staff in London, Eng.

Capt. W. B. Hanna, son of D. B. Hanna, Third Vice President, Canadian Northern Ry., who went to England as a lieutenant in the 92nd Highland Battalion and has been in charge of the C.E.F., stationery department, in England, has returned to Canada on sick leave, accompanied by his wife and child.

Lieut. W. G. Hazlett, formerly of the Canada Steamship Lines service, is reported to have been given the Military Cross. After being wounded in the right arm and head, he collected his men and captured an enemy machine gun.

Lieut. C. S. L. Hertzberg, A.M.Can.Soc. C.E., of the Canadian Engineers, second son of A. L. Hertzberg, Engineer, Ontario District, C.P.R., who was seriously wounded on Jan. 21 last, when he was shot in the chest, and who was given the Military Cross, has been appointed acting assistant adjutant at Spadina Military Convalescent Hospital, Toronto.

Engineer Sub-Lieutenant C. L. Pestell, whose death while on active service in the North Sea, was mentioned in our last issue, was born in England, June 17, 1888. He served his apprenticeship at the engineering works of Ruston, Proctor & Co. Lincoln, and was later engaged at the London & South Western Ry. works at Eastleigh, Eng. He subsequently came to Canada, and was engaged for some time in the G.T.R. shops at Stratford, Ont., and later transferred to C.P.R. service, eventually settling in Victoria, B.C. Soon after the outbreak of war, he returned to England and enlisted with the Army Service Corps, mechanical transport section. He was in France until June of this year, when he transferred to the Navy.

Capt. A. C. Lewis, formerly Secretary, Toronto Harbor Commission, was slightly wounded in his right hip during the fighting at Hill 70 recently.

Quartermaster General A. D. McRae, of the Canadian Expeditionary Forces, in England, formerly of Davidson & McRae, land agents, etc., Canadian Northern Ry., has come to Canada on two months leave.

Douglas Millar, of the General Baggage Agent's office, Grand Trunk Pacific Ry., was presented by the staff with a wrist watch, on his leaving Winnipeg, for Toronto, where he has enlisted with the Royal Canadian Dragoons.

Lieut. A. E. Voysey, Chief Assistant to European Manager, C.P.R., who, as mentioned in Canadian Railway and Marine World for September, was killed in action on July 29, entered C.P.R. service as junior clerk in 1900, received several promotions, and in Mar., 1910, was appointed private secretary, and in Nov., 1913, Chief Assistant to European Manager at London. Although he held an exemption from military service, he volunteered, joining the Royal Horse Artillery as a private. In Dec., 1916, he was given a commission in the Royal Garrison Artillery, and three months later was at the front.

Capt. D. B. Watson, of the Middlesex Regiment (England), who was awarded the Military Cross recently was, prior to the outbreak of war, in the C.P.R. Freight Department at Charing Cross, London, and enlisted as a private. He was gazetted second lieutenant in Sept. 1914, and was mentioned in dispatches for services in the Egyptian Expeditionary Force, and promoted to acting Captain whilst in charge of a company, and latterly acted as Major whilst at battalion headquarters. The London Gazette, in recording his services, says: "When acting Adjutant he performed most valuable services to his headquarters, crossing a ridge three times in daylight through heavy machine gun and rifle fire to obtain exact information as to the situation and dispositions of his battalion. He successfully accomplished his task under very difficult circumstances." He is only 21 years of age.

Canadian Railway Troops' Work at the Front.

Roland Hill, a war correspondent, wrote from the British western front, Sept. 4: "The Huns, almost up to the present battle, used to ignore the tremendous network of light railways which British and Canadian engineers have been building behind our offensive. When the big attack at Ypres commenced and thousands, perhaps millions, of shells rained over on him in one night, he began to sit up and take notice. Now every day and every night he pounds away with large calibre shells at everything that seems like a railway. It is the work of the Canadian railway troops, of which there are several companies in this Ypres area, to keep these lines working, and advance them as the victorious infantry gain new ground. As a consequence, these construction battalions are always under fire, yet day and night they are out in the land behind the front line, sometimes in and out around the very advanced British batteries laying new tracks or repairing old ones. Emergency gangs are always ready to be rushed to any part where Fritz has been paying impolite attention. Sometimes it is only a few yards torn up and only a few minutes work for these trained crews. But always before a few hours have passed the line is repaired and the signal has gone back to the ammunition dumps that the line is clear, and the limitless lines of little puffing engines and bogie trucks, loaded with everything explosive, are flowing steadily to the guns. Sometimes

Light railway laid over captured ground on the British Western Front
Official photograph issued on behalf of The Press Bureau. Crown copyright reserved. Loaned by C.P.R.

things get out of gear. Then the telephone in the Canadian colonel's hut rings an S.O.S. from the battery commander. Twelve-inch howitzer shells are badly needed at a certain battery. Eight cars have been ditched at Clapham Junction or Timbuctoo. Will the colonel send out a gang to the rescue. Out it goes, and with luck the track is repaired and the trucks replaced by an hour's hard work. In case it should occur again farther ahead, a wrecking crew goes with it right up to the guns, no matter how hard the Huns are shelling. That is the work of railway troops.

"Today in a large yard, crowded with everything that is needed to build and maintain a railway, I witnessed one of the rewards. There was a big mogul that came from Canada only a few months ago, standing on the standard gauge, and from the cab window leaned a locomotive man in brown jumpers. I asked him whether I could use his cab as a grand stand, and when he replied, 'Sure, Mike!' I felt I was at home. Six months ago he was running a C.P.R. locomotive out of Toronto. These Canadians, almost in the mighty army which Britain was attacking, were being presented with the Military Medal for episodes which have happened in the preparation for the great attack. In a little cleared space in the yard seven Canadians from Lt.-Col. Martin's company were lined up, and before them was the British Corps Commander. In a very sincere speech he told them how the work of their railway battalions was appreciated, and how happy he was to present them with the decorations they had won as bravely as their comrades in the fighting line with bayonet and bomb. These are the men, and this the bald, official tale:

"Sergt. Del Plain, who comes from Washington State. He ran levels over a projected light railway line under heavy enemy barrage, and when it was completed went over the line again, marking his stakes.

"Sergt. K. Armstrong, from Prince Albert, under heavy shell fire drove a motor engine and box car to a battery and removed three badly wounded gunners to a dressing station.

"Sergt. J. Manahan, from Moose Jaw, assisted, under heavy shell fire a wounded n.c.o. to a place of safety and also conducted his section from a badly shelled area into artillery dugouts.

"Corp. R. Webster, from Montego Bay, Jamaica. While the enemy had a heavy barrage on the area he ran a transit over a projected light railway for a distance of a mile.

"Sapper W. Jacobs, of Toronto, carried a badly wounded soldier from a wrecked railway line to a shell crater and then went for stretcher bearers and assisted in bringing him to the dressing station, all under machine gun and shell fire. He also carried a wounded soldier from an exposed position to a dugout and gave him first aid.

"Sapper R. H. Clark, a Kentish man, who joined in Canada, when the locomotive man of a ballast train was severely wounded, took charge of the locomotive, refilled the tank while under fire, and ran the train out of the danger zone.

"These are incidents all in the day's or night's work of the Canadian railway troops, and they never seem to rest. Infantry have their turn in the trenches and some out to refresh. The railway troops must always be on the job, because the railway must always be there and working."

In another letter, Roland Hill said: "Building a military railway is not like constructing a transcontinental. You don't quite know what the route will be, and your right of way has to be purchased with blood and shells. But you have to make a roadbed and string rails just as swiftly, perhaps more so, for the penalty clause in the contract is defeat. I couldn't find the colonel of the Canadian railway battalion I visited. He was somewhere out in front among the field ambulances where disgruntled German shells were still bursting, locating the grade for his next section, through the quagmire of a much fought over no man's land. But the adjutant was there, in a battered estaminet which had been, until yesterday, an advanced dressing station. His painter—they carry painters and divers, too,—had changed the Red Cross symbol into the sign that means Canadian Railway Construction Corps, and which has a Canadian brigadier, whose name is a text book in railway construction, at its head. The adjutant had his ear glued to the telephone and he was asking how his trains of material were coming along.

"When you at home read that 'the guns were being brought up satisfactorily,' and that there 'have been heavy rains all day,' you picture struggling teams of horses dragging batteries into advanced positions.

" 'I'll want 200 12-in. shells at Ottawa dump tomorrow night,' said the gunner captain. 'Mind you, the line isn't built yet, and the gun is somewhere back at Vancouver, which is an old, before-the-push station.' 'All serene,' answered the Canadian adjutant. 'I can pick them up at Halifax dump and bring them with the train taking the 8-in. to Oshawa.' (Dominion geography is a bit mixed up here.)

"It is swift travelling for a newly constructed line, but then when the combination of railway and artillery experts gets going, things do travel with celerity. If Hindenburg wants to keep away from the big guns he will have to fall back more than 5,000 yards in two days. Thanks to sacrifices by British and Canadian railways, we have plenty of material, and we have the blended brains and labor, too, in these men of modern war, who pave the way for the huge guns and clear the way for the fighting men who 'go over.' And when the guns are satiated, among the same lines will come anything from tin huts to house those men in the line, to tin hats to shelter them from shrapnel and tinned bully beef to feed them. There's never any want for traffic on the military railway.

"There are some of the old pictures of war left, but they are few and far between. Sometimes the gun and ammunition have to take the muddy streaks, but if luck is the least with us now they go over well planked roads where hauling is fairly light, and by the time the roads are getting wearily worn of the traffic the railway is there. We learned the value of lumber and railways at the Somme. On a huge stand, such as you might see at the draftsman's office at railhead on construction at home, there was a large scale map of what was yesterday 'Germany in Flanders.' There are blue and red lines which begin behind our old trenches and end nowhere—perhaps on the Rhine. There are the standard gauge and the light railways, and they are wanted quickly. Already this particular 2,000 yards of advance had been platted out with little stakes and tapes and the red-tabbed, keen staff captain of heavy artillery was putting the finishing touches to the plan. He had worked with the Canadian adjutant before they both knew what speed meant.

"If it was easier to build a spur for a 12-in. howitzer a few yards farther east, the gunner gave the builder the concession and phoned back to get his ranges corrected accordingly. If the gun had to go to that particular spot this Toronto captain would put on another hundred men for the job and build through the crater. There was no argument. Each knew the other knew his job. Some of the material was already up. British labor parties under the direction of a Canadian major who had worked gangs on the prairies and in the western mountains were out in the shell-pocked area making the first 1,000-yard grade. The new railway which had been advanced from yesterday was fact filling up with metals, fish plates, spikes and ties. There were just enough for the length to be built. Right and left hand switches were labelled off for the stations and gun spurs where they would be laid. The junctions and stations were sympathetically named after the places, big and little, in the Dominion, where they were torn up months ago and cast into this melting pot of the Empire's war. I am not giving the names that are on the map, but don't be surprised if tomorrow or this week you hear that new Regina or Le Pas, or even Ottawa has been shelled. There will be a good 8 or 12, perhaps 15-in., howitzer to give an account of itself there."

United States War Notes.

Three brigades of volunteer engineer regiments, composed almost entirely of railway men, from high railway officers to track layers, have been organized for service in France.

The U.S. Government has bought 150,000 tons of 80 lb. steel rails, to use in building a double track railway from its French port to its battle front in France, paying $38 a gross ton for Bessemer rails and $40 for open hearth rails. For angle bars $3.25 was paid and for track bolts and nuts $5.50. Deliveries were to be made by Oct. 1. Three hundred locomotives have been ordered for this railway, and 17,000 cars are being negotiated for. About 100,000 kegs of spikes are wanted. The U.S. Government will also build a considerable mileage of light railways in France.

C.P.R. Inspection Trip.—Sir George Bury, Vice President, C.P.R., arrived in Winnipeg, Sept. 18, on a trip over the company's Western Lines. Grant Hall, Vice President and General Manager, Western Lines, arrived in Winnipeg the same day from Vancouver, and after a conference the two vice presidents started west from Winnipeg on Sept. 20. They travelled first to Arcola, and then to Weyburn, from which point they went over the line to Alsask, travelling back via Moose Jaw to Regina and then on to the Pacific coast via Calgary. It was expected that the return trip would be made by the Kettle Valley Line and the Crowsnest Pass Line to Calgary, then on to Edmonton, returning to Winnipeg by other branch lines.

Operation of Government Railways Bridge at Fort William.—An electric switch, installed in the signal tower of the Canadian Government Railways draw bridge over the Kaministikwia River, at Fort William, Ont., will be used to signal masters of vessels which desire to pass. Whenever a vessel whistles to have the bridge opened, the operator, if in position to open it, will immediately flash all lights in the tower three distinct times.

Transportation Appointments Throughout Canada.

Algoma Central & Hudson Bay Ry.—E. B. BARBER, heretofore Treasurer, has been appointed Comptroller, vice I. L. Godfrey, resigned. Office, Sault Ste. Marie, Ont.

J. M. ALTON has been appointed Treasurer, vice E. B. Barber, promoted. Office, Sault Ste. Marie, Ont.

R. E. KING has been appointed Assistont Comptroller, Sault Ste. Marie, Ont.

H. HOODLESS has been appointed Auditor of Traffic Accounts, Sault Ste. Marie, Ont.

Canadian Government Railways.—L. S. BROWN, heretofore Assistant General Superintendent, Eastern Lines, has been appointed General Superintendent, Eastern Lines, vice J. K. McNeillie, resigned to enter Delaware & Hudson Co.'s service, and his former position has been abolished. Office, Moncton, N.B.

A. C. BARKER, Superintendent of Telegraph and Time Service, has also been appointed Assistant to General Superintendent, Eastern Lines.

R. W. SIMPSON, heretofore General Fuel and Tie Agent, has been appointed Assistant to General Manager, Eastern Lines, Moncton, N.B., and his former position has been abolished.

LOUIS LAVOIE, Purchasing Agent, Railways Department, Ottawa, now purchases fuel and ties for the Eastern Lines, C.G.R. also, the position of General Fuel and Tie Agent having been abolished.

D. H. WILLIAMS, heretofore Assistant to General Manager, at Moncton, has been appointed Special Representative, reporting to General Manager's office, Eastern Lines, Moncton.

W. E. DUPEROW, who has been appointed General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, has also been appointed General Passenger Agent, Canadian Government Railways, with jurisdiction, Armstrong and Fort William, Ont., and west. Office, Winnipeg.

C. K. HOWARD, heretofore Commercial Agent, Boston, Mass., has been appointed General Agent, Traffic Department, there, and his former position has been abolished. Office, Old South Biulding, 294 Washington St.

Canadian Northern Ry.—D. F. COYLE, Industrial Commissioner, Winnipeg, has resigned, having been appointed Superintendent of Western Offices, Home Bank Canada. We are advised that it is not the immediate intention to appoint a successor.

S. G. KATHAN, heretofore in Canadian Bank of Commerce service, is reported to have been appointed City Ticket Agent, C.N.R., Regina, Sask., vice — Watson, enlisted for military service.

S. PATTERSON is reported to have been appointed Travelling Freight Agent, Vancouver, B.C.

Canadian Pacific Ry.—H. HEFFERNAN has been appointed acting City Passenger Agent, C.P.R., and acting agent, Dominion Express Co., Guelph, Ont., in place of his late father, J. Heffernan.

F. TURNER, station master, Moose Jaw, Sask., is reported to have been appointed Trainmaster there. This is stated to be an additional appointment, making two Trainmasters at Moose Jaw.

C. E. CALZA, formerly of the Waldorf Astoria Hotel, New York, has been appointed Manager, Empress Hotel, Victoria, B.C.

Cape Breton Ry.—J. W. DOYLE, heretofore Auditor, has been appointed General Manager, vice G. E. Johnson, who retired on account of ill health, after 14 years occupancy of the position.

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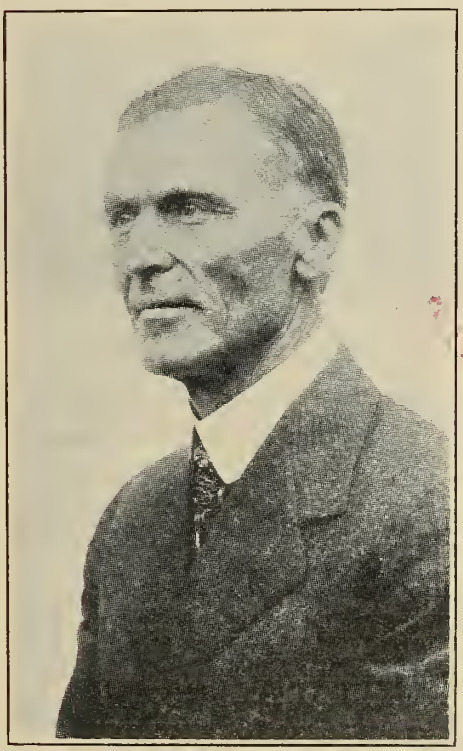
W. E. Duperow
General Pasenger Agent, Grand Trunk Pacific Railway, and Western Lines, Canadian Government Railways.



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Neil Marple
Master Mechanic, Canada Southern Division, Michigan Central Railroad.

Central Vermont Ry.—G. C. JONES, Vice President, having resigned, on his appointment as Assistant to President, G.T.R., Toronto, as announced in our last issue, all reports formerly made to him are now made to the President, E. C. SMITH, St. Albans, Vt.

H. G. KELLEY, President, G.T.R. and Grand Trunk Pacific Ry., Montreal, has been elected a director, vice C. R. Batt, deceased, and also Chairman of the Board and member of the Executive Committee, vice E. J. Chamberlin, resigned.

Chicago, Milwaukee & Puget Sound Ry.—A. W. NASE, Agent, Vancouver, B.C., has been appointed Commercial Agent, Bellingham, Wash.

J. W. STEVENSON has been appointed Commercial Agent, Vancouver, B.C., vice A. W. Nase transferred.

Delaware & Hudson Co.—F. P. GUTELIUS, Vice President, has also been appointed General Manager, Operating Department, during the absence of J. T. LOREE, who entered U.S. military service July 31. Office, Albany, N.Y.

R. W. BURNETT, formerly General Master Car Builder, C.P.R., Montreal, and latterly Vice President, National Car Equipment Co., Chicago, Ill., has been appointed Master Car Builder, D. & H. Co., reporting the General Manager, and with charge of the construction, design, maintenance, repair and cleaning of all cars, and in charge of all car shops. He is responsible for the proper maintenance of cars and the efficient and economical operation of the shops under his charge, and performs such other duties as the General Manager may direct. Office, Albany, N.Y.

J. K. McNEILLIE, heretofore General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B., has been appointed Superintendent, Susquehanna Division, D. & H. Co., vice R. J. McCarty, Jr., appointed Assistant to General Superintendent of Transportation, Albany, N.Y. Office, Oneonta, N.Y.

Grand Trunk Ry.—W. H. BIGGAR, K.C., General Counsel, G.T.R., and Vice President and General Counsel, Grand Trunk Pacific Ry., has been appointed Vice President and General Counsel, G.T.R., in charge of all legal matters pertaining to the system. Office, Montreal.

C. MANNING, heretofore secretary to Superintendent of Motive Power, has been appointed Assistant to Vice President in charge of motive power, car equipment and machinery (W. D. Robb). Office, Montreal.

W. H. SAMPLE, heretofore Master Mechanic, Eastern Lines, Montreal, has been appointed Superintendent of Motive Power, vice W. D. Robb, promoted. Office, Montreal.

E. R. BATTLEY, heretofore General Foreman, Motive Power Department, Deering, Me., has been appointed Master Mechanic, Eastern Lines, vice W. H. Sample, promoted. Office, Montreal.

G. H. WILSON, heretofore Assistant Master Mechanic, has been appointed Master Mechanic, Montreal shops, vice A. A. Maver, resigned.

A. McDONALD, heretofore Foreman of Erecting Shop, Stratford, Ont., has been appointed Assistant Master Mechanic, Montreal Shops, vice, G. H. Wilson, promoted.

E. S. McMILLAN has been appointed Road Foreman of Locomotives, Montreal Terminals, vice F. H. Holland, assigned to other duties.

M. A. HUMBER, heretofore Instructor of Apprentices, Stratford, Ont., is reported to have been appointed Examiner of

Apprentices for the system. Office, Stratford, Ont.

A. B. OGILVIE has been appointed Road Foreman of Locomotives, Districts 31 and 32 including Ottawa Terminal, vice W. M. Cooper, assigned to other duties.

T. KING, heretofore Agent, Detroit, Mich., has been appointed Superintendent, Detroit Division, Western Lines. Office, Detroit, Mich.

W. R. DAVIDSON, heretofore Superintendent, Detroit Division, Western Lines, Detroit, Mich., has been appointed General Superintendent, Western Lines, vice U. E. Gillen, promoted. Office, Chicago, Ill.

Grand Trunk Pacific Ry. — H. A. WOODS, Assistant Chief Engineer, having resigned, all correspondence and other matters relating to the Engineering Department are dealt with by J. A. HEAMAN, Assistant to Chief Engineer, Winnipeg.

W. E. DUPEROW, heretofore Assistant General Passenger Agent, has been appointed General Passenger Agent. Office, Winnipeg.

Michigan Central Rd.—CARL HOWE, heretofore Manager, New York Central Fast Freight Lines, Chicago, Ill., has been appointed Traffic Manager, M.C.R. Office, Chicago. This is a new position.

NEIL MARPLE, heretofore General Foreman, St. Thomas, Ont., has been appointed Master Mechanic, Canada Southern Division, reporting to Superintendent of Rolling Stock, Detroit, Mich. Office, St. Thomas, Ont.

J. A. MICHENER, heretofore Assistant General Foreman, St. Thomas, Ont., has been appointed General Foreman there, vice Neil Marple, promoted, and his previous position has been abolished.

Pere Marquette Ry.—T. EUSEL has been appointed General Storekeeper, vice W. R. Culver. Office, Saginaw, Mich.

Quebec, Montreal & Southern Ry.—J. B. DICKSON has been appointed General Superintendent of Transportation, vice C. E. Burr. Office, Albany, N.Y.

Canadian Northern Railway Construction, Betterments, Etc.

Central District.—M. H. MacLeod, General Manager and Chief Engineer, was in Port Arthur, Ont., Sept. 12, with other officials, looking over the ground with a view of laying spur tracks from the main line to some new elevators now under construction, and to working other trackage improvements necessary to meet the increasing traffic..

Western District.—The C.N.R. enters Moose Jaw, Sask., by a branch line from Radville, which at present terminates at South Hill, the station being located on Howe St. As originally laid out the branch was to extend through Moose Jaw to connect up with Saskatoon, either directly, or by joining up with another of the company's lines. Provision has been made for the laying out of terminals in the centre of the city, with a station on Athabasca St. In April last work was started at Athabasca St., on the construction of a timber trestle across the river to connect with the existing line at South Hill. The trestle work is about three-quarters of a mile long. Eighty car loads of lumber have been used, and the only part at present unfinished is a short piece at the crossing of the river, where two 30 ft. Howe truss spans have to be placed. It is expected that the work will be completed by Oct. 31. A temporary station will be built on Athabasca St., pending the laying out of the terminals. The trestle has been built by the company's own forces under the charge of W. J. Hopewell of the Bridge and Building department.

Vancouver Terminals.—It is reported that construction on the station building at the False Creek terminal is about 70% complete, and that the freight sheds are finished and ready to be taken over by the company. It is reported that orders to commence the train sheds are expected. Everything is said to be in readiness for this work which will take about four months. Tracklaying will be started as soon as the filling is all in. Apart from this work on the terminal itself there is the seawall construction at False Creek, near the station site. The piles have all been driven and the concrete pillars are all in. The wall itself is about half completed.

The work now progressing at Port Mann is the establishment of yards, and track is being laid as rapidly as possible.

L. S. Brown
General Superintendent, Eastern Lines, Canadian Government Railways.

Vancouver Island.—It is reported that about 10 miles of track have been laid on the line from Victoria in the direction of Port Alberni.

The Board of Railway Commissioners has directed the company to construct a transfer track between its railway and the Victoria and Sidney Ry. near Sidney.

Railway Lands Patented.—Letters patent were issued during August, in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres.
Calgary & Edmonton Ry.	629.00
Edmonton, Dunvegan & British Columbia Ry.	40.03
Grand Trunk Pacific Ry.	2.34
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.	2,865.98
Total	3,537.38

Hudson Bay Ry.—Notitce was given at Pas, Man., Sept. 13, that after construction work ceases this autumn train service on the line will be discontinued.

Box and Stock Cars for Canadian Government Railways.

Following are the general dimensions, etc., of the 5,000 40-ton, steel underframe, single sheathed box cars which the Canadian Government Railways ordered recently from Canadian Car & Foundry Co.:

Capacity	80,000 lb.
Length, inside	36 ft.
Width, inside	8 ft. 6½ in.
Height, floor to bottom of carline	8 ft. 0½ in.
Width of side door opening	5 ft.
Height of side door opening	7 ft. 8 7/16 in.
Length, between end sills	37 ft. 1½ in.
Width, over side sills	8 ft. 9½ in.
Height, rail to top of brake mast	13 ft. 10 in.
Height, rail to top of running board,	13 ft. 4¾ in.
Height, rail to centre of coupler	2 ft. 10½ in.
Height, sill to bottom of side plate,	7 ft. 10 3/16 in.
Height, top of rail to eaves	12 ft. 7 13/16 in.
Width, over eaves	9 ft. 3½ in.
Centre to centre of body bolsters	26 ft. 10 in.

These cars will be of the same design as some built two years ago for the C.G.R., but in a number of cases details will be altered slightly to conform to the requirements. One feature will consist in strengthening the end framing. The new cars will have 2 centre 5 in. Z bar end posts and in addition 2 intermediate 3 in. Z bar end posts, which will make a much stronger construction than used on the last cars of this type. The cars will have 15 in. 33 lb. per ft. channel centre sills; 10 in. 15 lb. per ft. channel end sill and 8 in. 11.25 lb. per ft. channel side sills, with the usual Z bar posts and braces common to this type of car.

The 1,000 all wood 30-ton stock cars also ordered from Canadian Car & Foundry Co., will have the following general dimensions:

Length, over side sills	36 ft. 10½ in.
Width, over side sills	9 ft.
Length, inside	36 ft.
Width, inside	4 ft. 4¼ in.
Height, top of floor to underside of carline	8 ft.
Height, top of sills to underside of plate	7 ft. 11⅜ in.
Height, top of sill to underside of girth,	3 ft. 10 in.
Outside of end sill to centre of body bolster	5 ft.
Centre to centre of crosstie timbers	7 ft. 8 in.
Centre to centre of body bolsters	26 ft. 10½ in.
Door opening	5 ft.
Height, top of rail to centre of draw-bar	2 ft. 10½ in.

These cars will be similar to some now in service on the C.G.R., which were built by Canadian Car & Foundry Co. about two years ago, but the new cars will be equipped with the economy cast steel draft arm and will have the following body specialties:

Couplers	Simplex 5 x 7 in. shank
Air brakes	Westinghouse KC-8-12
Body bolsters	Simplex
Draft springs	Class G.
Door fixtures	Camel type

The roof will be built up of 2 courses of 13/16 in. pine; one course will be laid longitudinally and the other crosswise on car, with a layer of insulation paper between. Trucks will be of the standard 30-ton arch bar type, 4¼ x 8 in. journal, with McCord malleable iron journal boxes, simplex truck bolsters, simplex no. 2 trussed brake beams and Laughlin roller side bearings.

The Minister of Railways is reported to have stated in the House of Commons, Aug. 25, in connection with the vote of $25,000,000 for rolling stock for the Canadian Government Railways, that the orders included 6,000 cars, 4,000 of which would be required for the government system, the balance being needed for the Canadian Northern Ry., the G.T.R., and other railways; and that 4,000 of the cars would be supplied by the Canadian Car & Foundry Co., 1,000 by the Eastern Car Co., and 1,000 by the National Steel Car Co., deliveries to be made between Oct. 1 and Feb. 1.

Canadian Railway AND Marine World
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Act for the Acquisition of the Canadian Northern Railway.

Following is the full text of the act passed by the Dominion Parliament at its recent session to acquire the C.N.R. Co.'s capital stock:

1. His Majesty may acquire the 600,000 shares of capital stock of the Canadian Northern Ry. Co. (par value $60,000,000) not now held by the Minister of Finance in trust for His Majesty, on such terms and conditions satisfactory to the Governor in Council as may be set out in an agreement to be made between His Majesty and the owners and pledgees of not less than five-sixths thereof, and for a price to be determined by arbitration as hereinafter provided.

2. (1) Upon the making of said agreement, at least five-sixths of the said 600,000 shares shall be transferred to the Minister of Finance in trust for His Majesty, and if there be any of the said 600,000 shares not transferred as aforesaid, the Governor in Council may declare the said shares to be the property of the Minister of Finance in trust for His Majesty, and the same shall thereupon become the property of His Majesty and shall be paid for pro rata with the shares so transferred.

(2) The necessary qualification shares the entrance to Pictou harbor, N.S., Aug. for directors may be transferred to or allowed to remain in their names by the Minister of Finance on such conditions as he may determine.

3. (1) So soon as the said five-sixths of the said shares have been transferred as aforesaid, the Governor in Council may assist the Canadian Northern Ry. Co., or any company included in the C.N.R. System, in paying and settling any indebtedness of such company or postponing the payment thereof on such terms as mal be agreed upon, and for such purposes may make adcances out of the Consolidated Revenue Fund: provided, however, that until authorized by parliament, the total of such advances shall not exceed $25,000,000. A statement of any such advances, showing in detail the purposes for which they were applied, shall be presented to Parliament by the Minister of Finance within 20 days after the opening of the next ensuing session thereof.

(2) The Canadian Northern Ry. Co., and each company included in the C.N.R. System, shall from time to time do such acts and things, make and issue such agreements, obligations and securities in connection with the payment or settlement or portponement of payment of the said indebtedness, as the Minister of Finance may require.

4. (1) The Governor in Council shall appoint one arbitrator, a majority of the said owners and pledgees shall appoint another and the two so appointed shall appoint a third, or failing agreement as to such appointment, the third arbitrator shall be appointed by the Judge of the Exchequer Court of Canada.

(2) The said arbitrators shall determine the value of the said 600,000 shares as of the date of the said agreement, and the said arbitrators shall proceed in a summary way, and may receive with respect thereto such reports and statements authenticated in such way as they may decide and such evidence as they may deem necessary or helpful, examine witnesses under oath and hear parties by counsel or representatives, and the unanimous determination of the arbitrators shall be final but should the determination not be unanimous, an appeal from such determination shall lie to the Supreme Court of Canada on behalf of His Majesty, or of the owners or pledgees, upon any question of law or fact, but no such appeal shall lie unless notice of appeal is given within thirty days from the rendering of the determination. In determining the value of the said six hundred thousand shares the arbitrators, should they regard it as expedient to take into consideration the reproduction cost of the C.N.R. System, shall not include therein the increase in value, due to the war, of labor, materials, equipment or of any property.

(3) The amount of the value so determined shall be paid out of the Consolidated Revenue Fund.

The Railway Situation in Hamilton.

The Hamilton, Ont., City Council passed the following resolution, Sept. 11: "That the report of W. F. Tye and N. Cauchon on the railway situation in Hamilton, as embodied in proposal C, be approved, that it be sent on to the Board of Railway Commissioners for Canada, as representing the views of the City of Hamilton, and that the board be petitioned to permit no new railway entrance into Hamilton and no new extensions, additions or changes in existing railway works in Hamilton or its vicinity unless same are in accordance with said proposal, and to so notify the railway companies concerned; and that for the purpose of relieving congestion and freight traffic through the city the railways be asked to adopt the measures proposed."

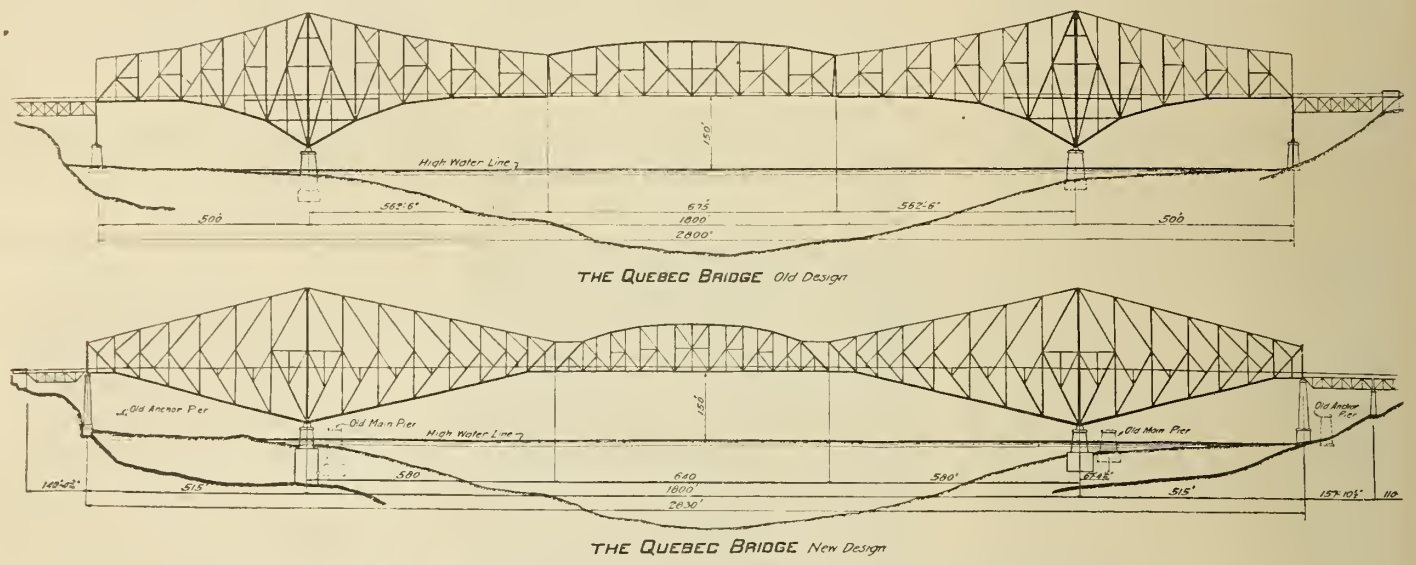
A suggestion was made that the council should endeavor to get officers of the railways together to discuss the project with a view of reaching some agreement, and this was passed on to the railway committee for action. Full details of proposal C, which has been endorsed by the council, and of the other two proposals made by the engineers, with a plan showing all of them, was given in Canadian Railway and Marine World for September, pg. 342.

Railway Crossings and the Public. — During the past few weeks there have been quite a number of fatalities at points where railways cross public highways, with the customary demand by the public for the elimination of level crossings. It goes without saying that level crossings are dangerous. So also are street crossings, and it will take time to eliminate them. In the meantime why not eliminate the fool motorist? Signs, signals, crossing bells, red lights, etc., seem to have no effect on this class of individual, who is always ready to rush a crossing and "take a chance." When a man states that he cannot hear a freight train of about 3,000 tons, travelling about 30 miles an hour, approaching a crossing, until it hits his car in the centre, one is apt to question his sanity.

Motor Freight Service—It was announced at Victoria, B.C., Sept. 15, that a motor freight service would be put in operation on Oct. 1 between that city and sidney, on the east coast of Vancouver Island, a distance of about 18 miles. It is said that a 5-ton motor truck will be used, making one round trip a day.

The Quebec Bridge from its Inception to the Placing of the Suspended Span.

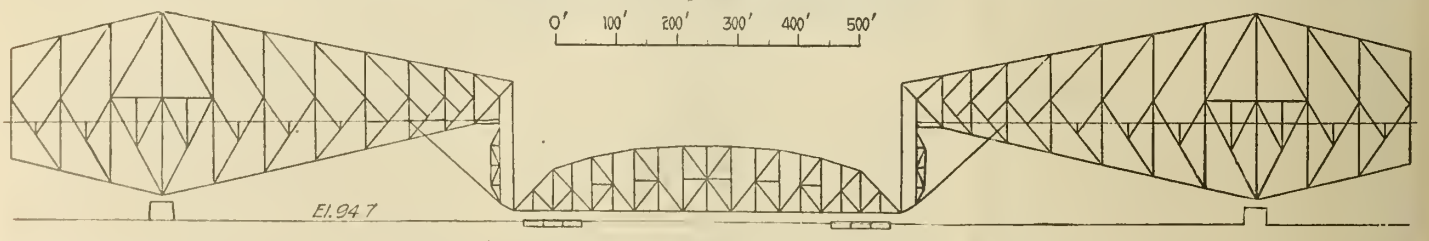
The bridge across the St. Lawrence River, near Quebec, is an accomplished fact. The project was first discussed in 1853, but for one reason or another it was not until 1897 that a really serious endeavor was made. It took four years from the reorganization of the old company to the letting of the contracts, and six years later the bridge, when nearly half completed, collapsed. The Dominion Government then took the matter in hand and after nearly three years of investigation, over six years of construction work, and the expenditure of about $12,000,000, the structure is now in the last stages of completion.



Designs for the Quebec Bridge, for the first one which failed in 1907, and for the second one now erected.

As before stated, the project dates back to 1853, at which date there was no other bridge across the river at any point. A New York engineer, named Serrell, made surveys and prepared plans for a railway bridge, on the suspension principle, to be located somewhere near the site of the present bridge. The estimated cost was $3,000,000. Whether the cost was considered too great an obstacle, or whether it was a lack of courage on the part of engineers, nothing further was done, and the first bridge erected across the St. Lawrence was built at Montreal by the Grand Trunk Ry. This was the Victoria tubular bridge, opened for traffic in 1860, and built by Robert Stephenson on the model of one he had previously erected over the Menai Straits, on the line to Holyhead, Wales, and a few years earlier the suspension bridge was built across the Niagara River, also for railway purposes. The project for building a bridge at Quebec to connect that city with the south shore of the St. Lawrence lay dormant until 1882, when M. W. Baby obtained a charter to erect a bridge. He had associated with him A. L. Light, a well known engineer, who interested some of the engineers of the then newly completed Forth bridge in the undertaking. The idea then advanced was to erect a bridge on the cantilever plan, which the erection of the Forth bridge had demonstrated to be the last word in big bridge designing. This second proposal also failed to get beyond the project stage.

The third attempt was made in 1887, when the Dominion Parliament incorporated the Quebec Bridge Co., with an authorized capital of $1,000,000, to build a bridge across the St. Lawrence at or near Quebec, to build one or more lines of railway to connect with the bridge, to connect it with existing or future lines of railway, and provide for vehicle and foot passengers crossing the bridge. The provisional directors twere: Hon. J. G. Ross, Lieut.-Col. Rhodes, R. R. Dobell, Thos. McGreevy, Lieut.-Col. J. B. Forsyth, G. Lemoine, E. Chimic, H. M. Price, J. I. Tarte and C. Duquet. The company's powers were extended in 1891, and in 1897 they were revived and confirmed, new interests led by S. N. Parent, then Mayor of Quebec, and afterwards Premier of the Province, having obtained control of the company. U. Barthe became Secretary of the company, and United States capitalists were interested. A New York engineer undertook the designing of the bridge, and E. A. Hoare was Chief Engineer in charge of all local work. The same site as the present bridge is built on was selected and together with the plans were approved by order in council on May 16, 1898. The plans provided for a cantilever structure, composed of 2 approach spans of 220 ft. each, 2 anchor spans of 500 ft. each, and a centre span of 1,800 ft. from centre to centre of the piers, the under side of the bridge to be 150 ft. above highwater. The bridge was to provide a double track railway, 2 lines of electric railway, and 2 ordinary roads for vehicles and foot passengers. In 1899 the Dominion Parliament granted a subsidy of $1,000,000 towards the erection of the bridge, and in the following year one-third of this amount was allocated to the substructure and approaches, and two-thirds to the superstructure. On Nov. 12, 1900, a contract under this legislation was signed between the company and the Railways Department. Three tenders were received early in 1900 for the building of the bridge, that recommended for adoption being for $3,600,000, exclusive of approaches, which were estimated to cost an additional $400,000. The contract for the erection of the piers and abutments was let in April, 1900, to W. Davis & Son, Cardinal, Ont., at an estimated cost of $1,000,000, the work to be completed within two years. Work was started on the substructure in Aug., 1900, the estimated quantity of masonry required to be put in place being 50,000 cubic yards. The preliminary work took up the whole of the summer and the autumn, and it was not until the spring of 1901 that the first caisson for the erection of the north pier was got into position. The contractors for the superstructure organized the Phoenix Bridge Co., of Phoenixville, Pa., to fabricate the steel work and to erect it. In 1901 that company began operations at the mills in rolling the steel and at the bridge in doing other preliminary work, and the actual construction work was started on the north side of the river in the summer of 1902. During the summer shifting sand was struck at the corner of the caisson for the south pier, resulting in delay to the work owing to the fact that the foundations had to be carried to a greater depth than anticipated in order to secure stability. The substructure work was completed at the end



General Scheme for hauling the Suspended Span for the Quebec Bridge.

of 1902, and from that time forward the erection of the steel work went on apace, and was carried on without interruption until Aug. 29, 1907, when over 1,300 ft. of the steel work had been erected from the south end. This comprised the anchor span, and practically one-half of the central span, reaching out to within about 100 ft. of what would have been the centre of the completed bridge. The whole of the completed structure collapsed, occasioning the death of 65 men who were working on it. The Dominion Government appointed a commission to investigate the cause of the collapse, and after a lengthened hearing of expert evidence, and the consideration of plans, etc., the commissioners came to the conclusion that the accident was caused by a defect in one of the chords.

Quebec Bridge. The placing of the suspended span

First row: Span being towed up the river. 2, Pinning south end of span to hoisting chain.
Middle row: 3, Pontoons floating from under span, during its third lift. 4, Span as suspended at luncheon time, Sept. 17.
Lower row: 5, Entire bridge, showing main span as suspended early on Sept. 18. 6, Entire bridge, with span in position, Sept. 20, 3 p..m

The next stage in the history of the matter was the determination to take over the bridge undertaking and to carry it to a completion as a Dominion Government work. The design of the bridge was placed in the hands of a commission consisting of H. E. Vautelet, a former C.P.R. Chief Engineer; M. Fitzmaurice, Chief Engineer of the London, Eng., County Council, and one of the construction engineers of the Forth bridge; and R. Mojeski, Chicago, Ill. They prepared plans which were made public in Feb., 1910, and which provided for the reduction of the main span from 1,800 to 1,758 ft., with the necessary readiustment of the anchor and shore spans. The new plans necessitated the rearrangement of the substructure, and a contract was let to M. P. and J. T. Davis, details of which were given in Canadian Railway and Marine World for Mar., 1910, pg. 189. Bridge builders

were asked to tender on the engineers' design, but were given permission to submit designs of their own if they so desired. Several alternative designs were submitted, and after some time—the composition of the engineers' commission having been changed by the retirement of Mr. Fitzmaurice, who felt his duties to have been accomplished by the submission of the plan, and the resignation of H. E. Vautelet, who was succeeded as chairman by C. N. Monsarratt, formerly Bridge Engineer, C.P.R.—one of the designs submitted by the St. Lawrence Bridge Co., Montreal, was accepted. This plan provided for a central span of 1,800 ft., carrying a railway track and two 4 ft. sidewalks. The cost of this bridge was estimated at $8,650,000. It is of the K web-system in the cantilever and anchor arms, the supended span being a modified Pratt. All members in the anchor arm and those immediately over the main pier, as well as the floor system, are carbon steel, the cantilever arms and suspended span being of nickel steel. The top chords are composed of built up riveted members extending over one full truss panel or two floor panels. The design has an 1,800 ft. channel span, as in the old bridge. The supended span is 640 ft. long, 110 ft. deep at the centre, and 70 ft. deep at each end. The cantilever arms are 580 ft. long, 70 ft. deep at the end, and 310 ft. high over the main post. The anchor arms are 515 ft. long. The trusses are 88 ft. apart, and there is a clear headroom of 150 ft. above extreme high water. The train load allowed for on each track is equivalent to two E-60 locomotives followed by a train load of 5,000 lb. per lineal foot of track. The contracting company was a combination of the Dominion Bridge Co. and the Canadian Bridge Co.

Work was started promptly by the contractors, both for the substructure and for the superstructure, and everything went on so successfully that the St. Lawrence Bridge Co. expected to complete its work at the end of 1916—earlier than was estimated. Sept. 11, 1916, was set for floating out the suspended member of the central span. The first part of this work had been successfully completed, and the 640 ft. long span had been raised several feet when, owing, as was afterwards ascertained, to the failure of a portion of one of the castings in the hoisting apparatus, the span slipped, crumpled up and fell to the bottom of the river. The fullest investigation was made into the matter, and it was found that there was no defect in the span, or in the plan, and that the other sections of the bridge had received no damage from the accident. The company immediately put in hand the fabrication of the steel for a new span and to prepare for its being got into position. This was done and the new span was ready for erection at the time of the September high tides this year. The method of erection, described in Canadian Railway and Marine World, Oct., 1916, pg. 417, was not changed except that extra precautions were taken in connection with the manufacture and getting in place of the hoisting apparatus, etc. A larger number of men were arranged for at the lifting jacks and at other points, and it was decided to raise the span only 2 ft. at each lift, instead of 4 ft., as was done in 1916. The scows bearing the span were towed out of Sillery basin on Sept. 17 at 5.10 a.m. and reached the bridge at 7.03, and the lifting operations were begun at 9.45. The span weighed about 5,000 tons, and this weight had to be raised so that there would be a clearance of 150 ft. at high water, thus the height to be raised would be 150 ft., less the height of the scows and the supports thereon. The hoisting proceeded steadily and with but two interruptions, once on Sept. 18 by a slight fog, and again on the following day by high wind. The final lift was completed Sept. 20, at 2.19 p.m., after which the bolting of the span into place was taken in hand. The work of laying the floor of the span and placing the rails for traffic will be proceeded with at once, and it is expected that it will be completed in two months, and the bridge formally opened for traffic about the middle of November.

The work of raising the span into position was supervised by Phelps Johnson, President, St. Lawrence Bridge Co.; G. H. Duggan, Chief Engineer; G. F. Porter, Construction Engineer; S. P. Mitchell, Consulting Engineer; W. B. Fortune, General Superintendent, and C. N. Monsarratt, Chairman of the Quebec Bridge Commission.

The Quebec Bridge as completed, from the Contractors' Sketch.

Traffic Orders by the Board of Railway Commissioners.

Interchange Track at Thorold, Ont.

26465. Aug. 24.—Re application of Niagara, St. Catharines and Toronto Ry., for approval of plan showing interchange track proposed to be constructed between the applicant's railway and the G.T.R. at Thorold, Ont., as required under the order 26186, June 5, 1917. Upon the report and recommendation of an engineer of the board, it is ordered that the plan filed by the applicant, dated July 4, 1917, be approved; the applicant to construct the tracks within three months from date of this order; and the question of the apportionment of the cost of the work to be reserved for further order.

C.N.R. Pulpwood Rates to Campbellford.

26476. Aug. 29.—Re application of Hydro-Electric Power Commission for suspension of proposed increased rates on pulpwood from stations on the Canadian Northern Ry. to Campbellford, Ont. Upon reading what has been submitted in support of the application, it is ordered that the advanced rates on pulpwood, as published on page 3 of Supplement 20 to C.N.R. Tariff C.R.C. no. E-860, to become effective Sept. 1st, 1917, be suspended; that cancellation Supplement 1 to C. N. R. Tariff C.R.C. no. E-156, to become effective Sept. 1, 1917, be suspended. and that the rates on pulpwood as published in C.N.R. tariff C.R.C. no. E-156, effective Oct. 2nd, 1912, be continued in effect, pending a hearing by the board.

Canadian Northern Standard Freight Tariff.

26504. Sept. 7.—Re application of Canadian Northern Ry. Company, under sec. 327 of the Railway Act, for approval of its Standard Freight Tariff C.R.C. no. W-1025, cancelling C.R.C. no. W-862. Upon the report and recommendation of the Chief Tariff Officer, it is ordered that the said tariff be approved.

Japan Buys Old Rails. Seattle, Wash., press dispatch, Sept. 19.—Large quantities of old steel rails have been bought in the northwest by Japanese brokers and shipped to Japan. In the last few weeks 2,300 tons have been shipped and additional shipments are being assembled. The brokers are paying $70 a ton for the rails, which originally cost $24 a ton. In turn, they are selling them to the Japanese railways for $100 a ton.

Electric Railway Department Items too Late for Classification.

A Usher, who died in Ottawa, Sept. 19, aged 59, was at one time in the old Canada Atlantic Ry. service and for the last eight years was airbrake inspector, Ottawa Electric Ry.

Joseph Gibbons, Toronto, and F. A. Hoover, Vancouver, B.C., were elected Vice Presidents of the Amalgamated Association of Street and Electric Railway Employes of America, at the annual convention at Providence, R.I., recently.

Sir Adam Beck stated recently that next year a service of hourly limited trains will be put in operation between London and Port Stanley, Ont., on the London & Port Stanley Ry. The present practice is to run every second car as a through car between the terminal points, the other car being for service to all intermediate points. The only intermediate stop made by the through cars is at St. Thomas.

Guelph Radial Ry.—In order to provide accommodation for traffic to the Military Convalescent Hospital at Guelph, an arrangement is reported to have been made with the Toronto Suburban Ry. for running rights over a portion of its line. This will necessitate the making of a connection between the G.R.R. and the T.S.R. and between the latter railway and the hospital grounds. It is proposed to provide a 20 minute service between the city and the hospital. The cost of operating the service is estimated at $8,000 a year. (Feb., pg. 73.)

Electric Railway Department

Montreal and Southern Counties Railway Cars.

The Montreal & Southern Counties Ry. has received recently from the Ottawa Car Mfg. Co. two of an order of three trailer cars for interurban service, the main features of which are as follows:

Length over vestibules	53 ft. 8 in.
Length of car over buffers	55 ft.
Length over corner posts	43 ft. 4 in.
Distance between bolsters	30 ft. 8 in.
Width over all at eaves	8 ft. 6 in.
Width over side sills	8 ft. ¼ in.
Height, top of rail to top of roof	12 ft. 8½ in.
Normal seating capacity	60 persons.

The car's sides are straight and sheeted with poplar sheeting. The roof is of monitor type, with ventilating deck sash, operated by M. & S.C.R. standard deck sash fixtures, and glazed with opalescent glass. The side sash are of mahogany; top sash glazed with opalescent glass set in lead, cathedral design. All body side windows are equipped with wire screens. The interior is finished in Mexican mahogany, dull finish. All metal parts are

Montreal and Southern Counties Railways' Trailer Car.

Ottawa Car Mfg. Co.'s standard car bronze, highly polished and lacquered. The seats are of the railway company's standard reversible type, upholstered in green imitation leather. The car is built on a steel underframe of specially light and strong construction, and is of through platform type. The cars are equipped with heaters, automatic couplers, Westinghouse a.m.m. air brake equipment with synchronizing governor equipment and Westinghouse electro-pneumatic signal equipment, also control train line for h.l. control. The basket racks are of M. & S.C.R. standard design. The lighting consists of clusters on the ceiling, also individual lights along the lower deck rail moulding. The cars are mounted on trucks with 33 in. cast iron wheels. A special feature of the underframe is a specially constructed anti-climbing spring buffer, built to take all ordinary buffing shocks and minor collisions. The car is equipped with marker brackets, also steel trap doors at the side openings. These trap doors are hinged to the vestibule doors with heavy bronze hinges, bolted on in such a way that when the door is open the trap is folded up behind the door. The car is also equipped with a lavatory on one side, with a standard improved dry hopper closet, also a 5 gallon water cooler. The curtains have spring plug rollers. The sash locks are of single cam type, with a heavy rack on the stop. The sash are also equipped with anti-rattler and improved drop handle hand brakes.

Edmonton Railway Employes' Wages.

The Edmonton, Alta., Radial Ry. employes applied to the city council, July 30, for an increase of wages, under the terms of the agreement which was due to expire Aug. 31. The men asked for renewal of the agreement for a further 12 months in all its details, with the exception of the following: "All employes under the agreement to be increased 20% over and above the rate received at present, and further, that owing to the extra responsibilities placed upon the operators of one-man cars the operators of same shall receive 55c an hour, with an 8 hour day, and that no shift be longer than 6 hours without relief, and further we desire this change to take effect from Aug. 31, and remain in force until Aug. 31, 1918."

The council referred the application to the utilities committee for consideration, and on Aug. 20 the men's representatives met the committee. The matter was discussed, but no decision was reached, and there was no further meeting with the committee. On the morning of Aug. 31 the men met and passed the following resolution: "Resolved, that our executive committee meet the city officials today and inform them that we want a meeting immediately, that unless our agreement is signed, sealed and delivered with the 20% increase included in the agreement, by 12.30 p.m., Aug. 31, our president be instructed that we take a vacation on Saturday morning."

This ultimatum was delivered to the mayor, and a meeting was held with the council in the afternoon. After discussion the council made the following offer: "That all motormen and conductors under 35c an hour be raised to 35c; second six months, 35c; third six months, 35c; fourth six months, 35c; fifth six months, 38c; sixth six months, 38c; seventh six months, 38c; eighth six months, 38c; ninth six months, 40c."

The men at a mass meeting, Sept. 1, refused the offer and decided to stand by their resolution of going out. They then went out and the car service was suspended. On Sept. 2 the council offered to pay 30c an hour for new men, with a 2½% increase annually until a maximum of 40c an hour was reached, with a rate of 45c an hour for one-man car operators. The superintendent was empowered to engage motormen and conductors on the above terms, men of experience to be given standing according to superintendent's decision. All late employes to deliver up uniforms and other street railway property by noon, Sept. 4.

The Dominion Fair Wage Officer was in the city, Sept. 3, but failed to get the parties to come together. After several days of fruitless discussion the council, on Sept. 10, as a final offer to the men, promised to restore them to their standing as of Aug. 31, if they returned to work by the following day. On the day the offer was made the city had secured men sufficient to operate cars. There was some little rough conduct in connection with the running of the cars, but no actual violence. Sept. 11, at 10 a.m., the new agreement—on the city's terms—had been signed by 125 men, and others subsequently came in, so that it was possible to put on the full service, Sept. 13.

It is estimated that the strike cost the city $2,500 in cash, and a loss in wages to the men of between $400 and $500.

The employes' representatives served notice on the Mayor, Sept. 14, of an application to the Minister of Labor, under the Industrial Disputes Investigation Act, making the following demands: The renewal of the agreement with the city and as provided for in the said agreement. Increase in wages in all cases, and more particularly as follows: A 20% increase over and above the rate paid on Aug. 31, 1917, pursuant to said agreement. That all men be taken back in seniority, and as they vacated work on Sept. 1. That no man be discriminated against for taking any part in this vacation. That all men, irrespective of their position, be reinstated to their former position prior to vacation on Sept. 1. And generally, all matters relative to those contained in said agreement, and the welfare of the men and their condition, having regard to the economies of the times. A press dispatch of Sept. 19 stated that the application had been granted and that the men had appointed H. A. MacKay, of Edmonton, as their representative on the arbitration board.

One-Man Cars on Calgary Municipal Railway.

The committee appointed by the Calgary, Alta., City Council to investigate the cost of operating one-man cars on the Calgary Municipal Ry., in comparison with the two-man system, concluded its work Sept. 13, and reported to the City Council as follows: We are of the opinion that there is very little saving between the operation of 2 and 4 motors in a double truck car at the present low price of power, and therefore approve of the use of 4 motors in all double truck cars. Alderman Arnold opposed the last part of the recommendation.

We approve of the operation of the

one-man cars on the system, under the conditions of the period in which they have been operating, on the ground only that they have led to an economy in operation. Aldermen Broatch and Adshead opposed.

That the present one-man and two-man car routes be kept as they are, and that accurate records for one month of the cash and ticket fares on the whole system, route by route, be kept, and report made to this committee.

We recommend that consideration be given to the safety of the front entrance, and that the reflection of the light in the motorman's face be drawn to the Superintendent's attention.

That the rule that no car be in motion unless the motorman-conductor can give his whole attention to the running of the car be strictly enforced.

A Calgary press dispatch Sept. 26 says that the Calgary City Council adopted the Committee's majority report and that this means that the use of one-man cars on the municipal railways will be made permanent.

Dismantling of London & Lake Erie Railway & Transportation Co's Line Probable.

The London & Lake Erie Ry. & Transportation Co.'s electric railway which runs between London and Port Stanley, Ont., 28 miles, has not paid any interest on its bonds for the past 2½ years and since the London & Port Stanley Ry. was taken over by the city of London and electrified, the L. & L. E. R. & T. Co.'s position has steadily grown worse. There is not sufficient business for two electric railways between London and Port Stanley and as the L. & P. S. Ry. is the shorter route, has the better roadbed, and makes quicker time, it gets the greater portion of the through traffic between London, St. Thomas and Port Stanley.

The L. & L. E. R. & T. Co.'s bondholders decided, at a meeting on Sept. 18, that if the municipalities through which the line runs will not come to its assistance financially, the franchise and property will be sold, either in block or in parcels. The President, G. B. Woods, of Toronto, John Purdom, of London, and Sidney Jones, of Toronto, were appointed a committee to negotiate with the municipalities and if the negotiations prove futile to dispose of the line without delay. It is believed that the line could be dismantled and the rails, wire, rolling stock, etc., sold for a higher price than the Hydro Electric Power Commission of Ontario was disposed to offer for the whole property a little while ago.

G. B. Woods is reported to have informed the London City Council, Sept. 26, that the company is willing to accept 60c on the dollar of its bonded indebtedness, or $505,000, for the railway. Failing this, he stated, the road would be scrapped immediately, and its equipment disposed of. The offer has been referred to the London Railway Commission for a report, and if this is favorable, it is stated the matter will be submitted to a vote of the ratepayers in January.

The L. & L. E. R. & T. Co.'s line was opened for traffic about 12 years ago. The original company, the Southwestern Traction Co. went into liquidation in 1909, thhe present company taking over the property Dec. 15, 1909.

A large jitney bus, with seating capacity for 18, operated in Ottawa during the exhibition recently.

Montreal Tramways Co's Annual Report and Meeting.

Following are extracts from the report for the year ended June 30. The financial statements show the following results:

Gross earnings		$7,725,498.88
Operating expenses		4,601,771.84
Net earnings		$3,123,727.04
From which deduct:		
City percentage on earnings	$491,430.95	
Interest on bonds and loans	858,542.38	
Interest on debenture stock	800,000.00	
Taxes	98,400.00	
		2,248,373.33
Net income		$875,353.71
Dividends		337,880.50
Surplus		$537,473.21
Less:		
Transferred to contingent renewal account.	$350,000.00	
War tax (estimated)	110,000.00	
		460,000.00
Transferred to general surplus		$77,473.21

The gross passenger earnings were $7,374,295.79, compared with $6,443,309.66 for the previous year, an increase of 14.45%, while the operating expenses increased $894,718.80, or 24.14%. The ratio of operating expenses to passenger earnings was 62.40%, compared with 57.53% for the previous year.

Contingent renewal account was charged with $567,082.66 during the year, representing expenditures made for special renewals, compared with $313,575.99 last year. $792,848.06 was expended during the year in the maintenance of properties, plant and equipment, and charged to operating expenses, compared with $583,894.20 the previous year. This amount, together with $567,082.66 charged to renewal account, makes a total expenditure during the year on the upkeep of the properties of $1,359,930.72, compared with $897,470.19 the previous year. During the year there was expended on capital account $1,509,488.90, compared with $320,872.17 the previous year. During the year the company issued $3,000,000 of 5% 30-year gold bonds. From the sale of these bonds there remains at the company's credit at the Harris Trust & Savings Bank, Chicago, $1,063,985.22, which is at the company's disposal for extensions and improvements.

While the gross passenger earnings show a satisfactory increase over last year, the operating expenses have increased in greater proportion, the ratio of operating expenses to passenger earnings being 62.40%, against 57.33% for the previous year.

The company has continued the work of placing its overhead feeder wires in the municipal conduit and has completed during the year the work commenced in the previous year on Bleury St. and Park Ave.

With reference to the rearrangement of system of power distribution referred to in the last annual report, the installation of the first unit of 17,000 h.p. is practically completed, and it is expected will be in operation in August. Work has commenced on the installation of an additional unit of 17,000 h.p.

The work on the contract for machining shells, referred to in the last annual report, is practically completed, but there still remains some final adjustments to be made. An estimated amount has been provided for the war tax on the results of the whole operations of the company, the present accounting period being the third and final period for this company under the Business Profits War Tax Act, 1916.

During the year the company placed an order for 100 motor and trailer cars, with the necessary equipment. These cars are of the very latest type, and contain every known device and improvement to assure comfort and safety to the travelling public. The first deliveries are expected shortly.

At the last session of the Quebec Legislature the government appointed a commission of five members, with power to make a new contract between the City of Montreal and the company, and the directors trust that this matter will be settled shortly, and result in enabling the company to develop and maintain its system to the best interest of the public and your company.

The property has been maintained in a high state of efficiency and is in excellent condition.

Statistical Statement.

New construction during year	$1,509,488.90
Expenses % of passenger earnings	62.40
Passengers carried	179,974,549
Car earnings per passenger	4.10c
Transfers	63,451,272
Total passengers carried	243,425,821
Car earnings per passenger, total carried	3.03c

At the annual meeting, Aug. 31, the directors were all re-elected. They are as follows: E. A. Robert, President; J. W. McConnell, Vice President; F. Howard Wilson, Vice President; W. C. Finley, Hon. G. G. Foster, K.C., P. J. McIntosh, J. M. McIntyre, W. G. Ross and Hon. J. M. Wilson. J. E. Hutcheson is General Manager and Patrick Dubee, Secretary-Treasurer.

Jitney Traffic Notes.

Application has been made to the Winnipeg City Council by W. J. Tupper, K.C., on behalf of a company which desires to operate a motor bus service in the city. The company asks for a 10 year franchise, the right to fix tariffs, to use tickets and to operate a fast line and a slow line. The matter is under the consideration of the market and license committee, which, it was stated, Sept. 6, was preparing a bylaw for submission to the council.

Winnipeg jitney men, who, it was reported on Sept. 4, numbered 475, will under the bylaw adopted that day have to furnish a bond to the city to provide against damage to persons and property by accident. The amount of the bond is fixed at $1,000 against personal damage to any one person, $5,000 against personal damages in any one accident, and $200 against damage to property. This bond will cost each jitney driver $150 a year under an insurance policy. The new regulation became effective Sept. 20.

Judgment was given, Sept. 6, by Justice Murray in the application of J. L. Mackay for an order to compel the Vancouver City Council to restore his jitney license, which had been cancelled under a city bylaw. Mackay refused to conform to the regulation requiring him to select a route and to operate his jitney thereon only. The legal point reserved was whether the city's charter and powers under the act covering motor vehicles gave power to confine cars to particular routes. The judge held that such power had been expressly given in the amendments made in the act recently and refused the application.

The Winnipeg Electric Ry. in its current advertising is directing attention to points of interest reached by its suburban lines. The trip most recently described and illustrated is that to Lockport, for St. Andrews Rapids and the Indian mounds.

Supreme Court Judgments re Contributory Negligence in Accident Case.

Canadian Railway and Marine World some little time ago gave particulars of a decision given by the Supreme Court in the case of Mrs. J. P. Hayes vs. Ottawa Electric Ry. Co. The judgments given by the various judges are of such importance to electric railway companies generally that they are given in full as follows:

DAVIES, J. I am to allow this appeal and dismiss the action on the ground that no negligence on the part of the motorman was proved or could be properly inferred from the evidence. The car was only 35 ft. away from the unfortunate man at the time the motorman could have appreciated or believed from the man's conduct and actions that he intended crossing the track. From that moment the motorman did everything in his power to prevent the accident and I fail to find from the evidence anything that he omitted to do that he should have done or that from the moment he did anything he should have refrained from doing. Even if it was possible to conclude that he then committed an error of judgment it was clearly in the "agony of collision," for which the company could not be held liable.

ANGLIN, J. If the question in this case were whether on the fiindings of the jury the judgment for the plaintiffs should be upheld, it may be that the cases of Long v. Toronto Ry., 50 S.C.R., p. 224, cited in the judgment a quo, would have some bearing upon it. But the grounds of appeal in this court are, as they appear to have been in the Appellate Division, that there is no evidence to sustain the findings of negligence against the defendant's motorman, and that the finding that the contributory negligence of the deceased did not continue up to the moment of the accident is contrary to the evidence. In so far as the result must depend upon a consideration of the evidence for the purpose of ascertaining how far it justifies these impeached findings, the Long case affords no assistance. So rarely are the circumstances of two cases identical in all material particulars that a decision upon a question of fact is scarcely ever of value as a precedent. The circumstances under which the motorman was found to have been negligent in the Long case differ widely from those with which we now have to deal. In the Long case, the unfortunate man who left the sidewalk was visible to the motorman at a much greater distance; a longer interval of time elapsed and the motorman had much greater opportunity for appreciating that Long was in a state of absentmindedness. Moreover, the victim himself became aware of his plight a moment or two before he was struck though too late to save himself, while the unfortunate Hayes appears never to have been conscious of the oncoming car.

I have reached the conclusion that in the case at bar there was no evidence to support the findings of negligence against the defendant. It is conceded that the finding of defective equipment cannot be sustained. The other finding of negligence is "that the motorman should have stopped when he realized the danger." The jury subsequently added to this latter finding the following explanatory rider: "According to evidence submitted, the motorman first realized the danger of an accident when at a distance of 45 or 50 ft. Instead of taking up the slack, as stated, had he applied the brakes immediately, we think the accident would have been avoided. The motorman in his evidence admitted that he realized the man was going to cross the street, that he had in his hands the power to stop the car either by brake or reverse. We find that had the motorman acted more promptly, the accident would have been avoided."

The first observation to be made on this part of the verdict is that the jury was manifestly under a misapprehension in regard to the taking up of the slack. The only evidence on that point, given by the motorman himself, is that he had taken up the slack and had his brakes partially tightened before he reached Bronson Ave., i.e., while the deceased was still on the sidewalk and before the motorman had seen him. Upon all the evidence, it is well established that when the deceased stepped off the kerb to cross Somerset St., the front of the car, travelling at about 10 miles an hour, or 14½ ft. a second, was about midway on Bronson Ave., and some 45 to 50 ft. from the point of contact. To reach that point, the deceased had to move slightly less than 10 ft. The motorman's statement is that he first saw the deceased as he stepped from the kerb; that because he than apprehended that an accident might happen he immediately rang the gong to warn him; that at 30 ft., or about one second later, he realized that the deceased was not going to stop, became seriously apprehensive and at once applied the brakes as vigorously as he could, still gonging, and also shouting to the deceased, who continued to walk on with his head down, apparently oblivious of danger. That the motorman did all in his power and exercised his best judgment from the moment when he was 30 or 35 ft. from the point of contact, is not, and, upon the evidence, could not be contested. If he was at fault at all, it must have been in not applying his brakes or reverses the moment he saw the deceased step from the kerb at a distance of 45 or 50 ft. from him. That would imply that he should instantly have anticipated, merely because he saw the man step on to the roadway, that he was in a brown study, or otherwise so abstracted that the gong might fail to arouse him and that he might walk into the car without having become aware of its approach. It must be remembered that realization of these possibilities—they cannot be deemed probabilities—and action upon them to be effective must have been instantaneous. In a single second the car had travelled to within 30 or 35 ft. of the point of contact. No doubt a motorman driving a street car must always be alert. But, having regard to the practical necessities of street car operation, I am not prepared to hold that it was open to a jury to find, under the circumstances of this case, that in failing to apply his brakes instantaneously upon the deceased stepping off the kerb and before he had seen, or had any reason to think, that the sharp clanging of the gong would be ineffective, the motorman was guilty of negligence.

Every case of this kind must depend upon its own facts. A very slight difference in the circumstances may render conduct, which is justifiable and not improper in one case, negligent and indefensible in another. It would be quite wrong, and probably entirely futile, to attempt to define any standard of general application. I can only say that I fail to discover in the facts before us anything to warrant a finding of fault or negligence on the part of the motorman. If he made any mistake at all it was at most an error of judgment in a sudden emergency (The Khedive, 5 A.C. 876, 891), but even that is not established.

Moreover, although there is no finding of excessive speed, and the company therefore cannot be held liable on that ground, the distance travelled by the car after the motorman had applied the brakes with all his strength—about 150 ft. according to the weight of evidence—would rather indicate that no effort on his part made at 45 or 50 ft. from the point of contact would have prevented the accident.

In the view I have taken, it is unnecessary to dwell upon the finding that the contributory negligence of the deceased did not continue up to the moment of the accident. If, as the jury found, the deceased was negligent "by not using proper precautions crossing the street," there is nothing in the evidence to indicate any change in that respect before the accident. On the contrary, it would seem that Hayes remained oblivious of any danger, and proceeded with his head down towards the point of contact, until he was actually struck by the car. The learned trial judge, having had his attention called to the Long case, explained to the jury that by the 9th question—"Was the negligence, if any, of the deceased a continuing act of negligence up to the very moment of the accident"—he meant, "did he become aware that the car was approaching and was he oblivious of the danger, that is the sense in which that question is put." The jury answered "No." There was no evidence that the car was approaching. The evidence was all to the contrary. If it was essential to his being negligent in the last moment before the accident that he should have been aware of the approach of the car, this answer of the jury may be intelligible. But it is, from any point of view, very difficult to reconcile it with their finding that there was contributory negligence, in view of the evidence that there had been no change from the moment he left the sidewalk either in regard to his knowledge of the oncoming car, or in his attitude in, or manner of, approaching the danger point. But it is not necessary further to consider this aspect of the case.

Notwithstanding my reluctance to set aside the verdict of a jury upon a question of negligence, and my sympathy for the plaintiffs in their misfortune, I am for the foregoing reasons constrained to allow this appeal. The defendants are entitled to their costs throughout, if they should see fit to exact them.

BRODEUR, J. This is another of those too numerous street railway accidents. The victim, J. P. Hayes, was crossing Somerset St., in Ottawa, at the corner of Bronson Ave., when he collided with a street car and was killed. The verdict of the jury at the trial is a very unsatisfactory one. At first, it is found that the victim, by not using proper precautions in crossing the street, was guilty of negligence. It is common ground that the deceased stepped off the kerb and reached the track without looking if there was any danger. His negli-

gence had been evidently a continuous one up to the very moment of the accident, however differently the jury may have reported. Such a finding is certainly unjustified by the evidence. If, as the jury found, the deceased was negligent in starting to cross the street without taking the necessary precautions, he was equally negligent in continuing to cross without seeing whether there was danger or not. Their answer to question 9 seems to me then conflicting with their answers to questions 1 and 2.

They found also that the death of the victim was caused by the negligence of the defendants, and that if the latter had exercised reasonable care the accident would have been prevented notwithstanding the negligence of the deceased. But the reasons they have given at different times for such a finding are not sustained by the evidence. At first, they came back with the answer that the company was negligent for not having their car equipped with up to date appliances and that the motorman should have stopped when he realized the danger. The trial judge then observed that there was no evidence as to any defective equipment, and suggested to the jury that their verdict of negligence on the part of the company should be connected with the conduct of the motorman. They returned with the same answer as to defective equipment and added the following: "According to the evidence submitted, the motorman first realized the danger of an accident when at a distance of 45 or 50 ft. Instead of taking up the slack as stated, had he applied the brakes immediately, we think the accident would have been avoided." The learned trial judge was not satisfied with that answer and asked them to suggest whether the use of the reverse, instead of the brakes, would not have been more effective. And the jury subsequently added the following to their previous answers: "The motorman in his evidence admitted that he realized the man was going to cross the street, that he had in his hands the power to stop the car either by brake or reverse. We find, had the motorman acted more promptly, the accident would have been avoided."

It has been admitted at bar by counsel for respondent that the evidence does not justify the verdict as to the defective equipment. As to the conduct of the motorman, the evidence does not disclose any negligence on his part. Before reaching the cornor of Bronson and Somerset Sts., the motorman started to ring his bell according to the rules of the company and to take up the slack of the brakes. When at about 45 ft. he saw the deceased stepping off the kerb, he began to apply the brakes and continued to ring the bell and at 30 ft he became apprehensive of danger and tightened his brakes the best he could. He could certainly not, even at 45 ft., change the braking operation for the reverse. The loss of time which such a change would have occasioned would not have been of any advantage. There is no excessive speed charged against the motorman and no lack of control on his car. He fulfilled his duty as promptly as he could when the serious apprehension of the danger came. But it was then too late to avoid the accident.

There is no evidence on which a case of negligence has been made against the company. The proximate cause of the injury was the negligence of the victim. The latter was injured by his own fault with no fault on the part of the company. The action should have been dismissed, as the judgment a quo maintained the action. The appeal should be allowed with costs.

THE CHIEF JUSTICE: I was at first disposed to dismiss this appeal on the ground that there was evidence to support the judgment at the trial which has the approval of the Court of Appeal. At the time of the accident the deceased was not casually crossing from one side of the street to the other, but continuing his way along Bronson Ave. at the point where it is crossed by Somerset St. It was the duty of the driver of the car to exercise great care and vigilance, when coming to the point of intersection of those two busy thoroughfares, so as not to violate the rights of foot passengers proceeding along either.

The jury found that the car was imperfectly equipped, that the brakesman was not diligent and some of the witnesses said that the car was going at a speed of 20 miles an hour, but there is no specific finding as to this. It is said that in the absence of that finding there is not sufficient evidence to justify the judgment of the court below, but assuming that to be the case, I am of the opinion that we might on the evidence supply what the jury has omitted as to the speed. The evidence of the witnesses is to the effect that the car ran several lengths beyond the place of the accident before it was stopped. It was about 28-30 ft. long and could, going at 10 miles an hour, be stopped in less than 60 ft.

Assuming that there was some evidence of negligence on the part of the deceased, that negligence would not disentitle him to recover, because the motorman if he had been alert and vigilant, and kept his car in proper control, might have, in my opinion, averted the consequences of the deceased's negligence. I do not, however, wish to enter a formal dissent, because it may reasonably be said that the negligence found by the jury is not conclusively proved to be the proximate cause of the accident. Vide: 14 Gray Mass, 69, 75. 159 Mass, 142-146. 7 Revue Trimestrielle, p. 22, No. 24. N.Y.C. Appeals, 6th Jan. 1909. B.C. Electric v. Loach in P. C. 1914 (8 Western Weekly Reporter, p. 1263).

DUFF, J. I concur in the judgment, allowing the appeal and dismissing the action with costs.

The Toronto Railway Overcrowding Case.

The main points of the judgment of the Judicial Committee of the Imperial Privy Council on the Toronto Ry.'s appeal against a conviction for maintaining a public nuisance by overcrowding its cars, was given in Canadian Railway and Marine World for September, since when the full text of the judgment outlining the argument leading to the setting aside of the judgment of the Appellate Division of the Supreme Court of Ontario and the remitting of the case to the Supreme Court for the granting of an acquittal, has been received. This contains matter of considerable interest to street railways, similarly situated, in their relations with municipalities, and an extended summary of the arguments therefore follows:

The appeal, for which special leave was given, was from a judgment of the Ontario Court of Appeal. The question is whether the appellant was properly found guilty on an indictment for having failed in breach of an alleged legal duty to take reasonable precautions to avoid undue, dangerous and illegal overcrowding of passengers in its cars, whereby the property and comfort of the public, as passengers in these cars, were endangered. The indictment was brought under the Criminal Code, which enacts that the criminal law of England, existing at a certain date, is to be the criminal law of Ontario, except as modified by the code itself, or other statutes. It defines a common nuisance to be an unlawful act or omission to discharge a legal duty, which would endanger the lives, safety, health, property or comfort of the public, or by which the public is obstructed in the exercise or enjoyment of any right common to all of His Majesty's subjects. Such nuisances are divided into two categories. In one, a person is guilty of an indictable offence and liable to one year imprisonment who commits a common nuisance which endangers the life, safety or health of the public, or which occasions injury to an individual. In the other, anyone convicted on indictment, or information, for any common nuisance other than those covered in the previous item, shall not be deemed to have committed a criminal offence, but all such proceedings or judgments may be taken and had as heretofore to abate or remedy the mischief done by such nuisance to the public right. The effect of this, in the committee's opinion, leaves the indictment as a method of procedure for trying the general question, regarding a common nuisance, but it deprives a conviction of its criminal character. Another section enacts that an appeal from a conviction will lie to the Court of Appeal, and when the judges are unanimous, their decision shall be final, but if a judge dissents, an appeal will lie to the Supreme Court of Canada. Another section enacts that notwithstanding any Royal prerogative, or anything contained in the Supreme Court Act, or in the Interpretation Act, no appeal shall be brought in any criminal case from any judgment or order of any court in Canada to any Court of Appeal or authority by which in the United Kingdom appeals to His Majesty in Council may be heard.

The appellant is a street railway company incorporated by statute, and operating a street railway under an agreement ceived $500 from the Dominion Naval in the conditions of the agreement that cars are not to be overcrowded, a comfortable number of passengers for each class of car to be determined by the City Engineer and approved by the City Council. It does not appear that the obligation thus imposed on the appellant was invested by the statute with anything further than the contractual character which it originally possessed. The indictment contained a number of counts, some of them for criminal common nuisances, based on a section of the code which deals with the life, safety or health of the public. The only count, however, on which the jury found a verdict of guilty at the trial was one based on danger to the property and comfort of the public, under another section. The appellant demurred to the indictment, but the demurrer being overruled, the appellant pleaded over, and on request, the judge stated a case for the Ontario Ap-

peal Court, which raised, among other questions, whether the demurrer should have been allowed. The Appeal Court found that the appellant was guilty on the finding of the jury, that the demurrer was properly overruled, that there had been no misdirection and that the conviction should be affirmed. The Appeal Court thought that the code intended to leave untouched the common law right to proceed by indictment for a public nuisance, and merely to alter the punishment for what remained a criminal offence, and said that, just as in the case of a nuisance on a public highway, the nuisance was a public one, although it was only those members of the public who had occasion to use the highway who were prejudicially affected, and so, all those members of the public for whom there was room in the cars had the right to travel in them.

The special leave to appeal was granted the company, subject to a reservation of liberty to the respondents to raise the question whether leave should have been granted, having regard to the fact that the matters in dispute formed the subject of a criminal charge. It was arranged that, as a question had been raised as to whether the Dominion statutes had effectually abrogated the prerogative right to hear the appeal, the English and Canadian Attorneys General should be notified, and both of them were represented during the argument. The committee, however, decided that it had become unnecessary for it to express an opinion on the question of prerogative, as the conclusion had been arrived at that this is not a criminal case within the meaning of section 1025 of the Criminal Code, which purports to limit the prerogative, but is in reality a question of civil right which may properly be made the subject of appeal to the King in Council, and as to which the prerogative is not affected. The point turns on sec. 223, which provides that anyone convicted under it is not deemed to have committed a criminal offence, and goes on to preserve the possibility of consequential proceedings, not for the punishment of the person convicted, but for the abatement or remedy of the mischief done. The wrong done, therefore, in this case, is, in the committee's opinion, only a civil wrong.

The foregoing arguments led to the disposition of the appeal, as dealt with in our last issue.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. — A United States press report, on Sept. 4, stated that the Chicago, Milwaukee & St. Paul Ry. interests have secured control of the B.C.E.R. There is a traffic agreement between the two companies, under which the C.M. & St.P.R. carries freight into Vancouver. B.C.E.R. officials in Vancouver state that there is not even the prospect of negotiations with the C.M. & St.P.R. in the way of a sale of the company's interests.

British Columbia Electric Ry. and aliled companies:

	July, 1917.	July, 1916.
Gross earnings	$438,378	$411,847
Expenses	380,054	348,647
Net earnings	58,324	63,200

Calgary Municipal Ry.—

Earnings for July	$50,320.73
Operating expenses	47,126.29
Net earnings	$3,194.44
Total earnings for July, 1916	$65,314.40

The decrease in earnings is accounted for by the fact that the military camp at the Sarcee Reserve was open in 1916, the earnings of the Sarcee line in July of that year being $17,547.31, while in July of this year the earnings on that line were only $1,543.53. The cost of operation has been reduced to 13.024c a car mile, against 14.264c in July, 1916. This is attributed to the increased use of one-man cars.

Cape Breton Electric Co.:

	July, 1917.	July, 1916.
Gross	$40,500.71	$32,858.91
Expenses	25,293,27	19,171.30
Net	15,207.44	13,687.61

Dominion Power & Transmission Co.—The directors declared a dividend of 1% recently for the three months ended Aug. 31, payable Sept. 15. For the past three years the company has been declaring only half-yearly dividends.

London and Port Stanley Ry.—At a meeting of the London, Ont., Railways Commission, Sept. 18, the chairman, Sir Adam Beck, reported that the net surplus for the year ended June 30, 1917, was $26,581.48, an increase of $8,107.34 over the previous year.

Regina Municipal Ry.:

	Aug.1917	Aug.1916	8 months to Aug.31, '17
Revenue	$16,470.94	$14,679.13	$152,021.19
Operating	15,004.77	13,600.87	130,783.08
Fixed charges.	8,005.56	8,022.96	64,044.46
Deficit	6,539.39	6,944.70	42,806.35

Toronto Civic Ry.—Receipts for August, $23,636.74; passengers carried, 1,-419,371, against $19,475.12 receipts and 1,140,466 passengers carried in Aug., 1916.

Toronto Ry., Toronto & York Radial Ry. and allied companies:

	July,'17	July,'16	Jan.1 to July31,'17	Jan.1 to July31,'16
Gross	$954,192	$867,789	$6,827,776	$6,202.988
Expenses	527,288	436,735	3,571,702	3,172,495
Net	426,904	431,054	3,246,047	3,030,493

Winnipeg Electric Ry.—Gross earnings for July, $242,797.07; net after operation, $31,346.51. There was a deficit for the month, after deducting fixed charges, of $29,879.20.

	July,'17	July,'16	Jan.1 to July31,'17	Jan.1 to July31,'16
Gross	$242,797	$242,688	$1,916,167	$1,994,162
Expenses	211,450	168,101	1,488,923	1,239,067
Net	31,347	74,587	467,244	705,095

Electric Railway Projects, Construction, Betterments, Etc.

Brandon Municipal Ry.—The Brandon, Man., City Council is considering the acquiring Lake Percy Park from the Dominion Government as an amusement park. Alderman Curran is chairman of the street railway committee, which is considering this among other probable means of making the municipal railway a paying undertaking. (Sept., pg. 368.)

Calgary Municipal Ry.—In connection with the city's project to secure gravel from Princes Island by building a temporary bridge across the Bow River at Fourth St., and running a street car line over it, an alternative suggestion was made to the city commissioners, Sept. 12, by the president of the Eau Claire Lumber Co., viz., that the bridge to the island be built from the south side of the river, which would enable the railway to haul lumber from the mills to the various steam railways. The City Engineer and Superintendent McAuley were directed to interview the company's officers and report. (Sept., pg. 368.)

The Cape Breton Electric Co. is being asked to extend its line from Charlotte St., via Dorchester, George and Ferry Streets, to the Dominion Iron and Steel Co.'s plant, Sydney, N.S.

London St. Ry.—A new diamond for the crossing of the G.T.R. at Tecumseh St., London, Ont., is expected to be installed in the autumn. The temporary derailer and trackwork at the crossing is causing some inconvenience to traffic On Sept. 7, the temporary track gave way, and for several hourse passengers had to transfer and walk over the crossing. (Aug., pg. 286.)

Ottawa Electric Ry.—Paving work was started on Sussex St., between George and Rideau Sts., Sept. 30, and pending completion the Rockcliffe and the Preston car services have been re routed. (Aug., pg. 324.)

Port Arthur Civic Ry.—We are officially advised that there is being laid approximately 2,500 track feet of concrete reinforcing liner adjacent to rails on Cumberland St. between Arthur St. and Bay St., Port Arthur, Ont. The work was reported on Sept. 7 to be practically completed. (Sept., pg. 324.)

Sandwich, Windsor and Amherstburg Ry.—The ratepayers of Walkerville, Ont. have granted the company a renewal of its franchise on part of the belt line in the town, giving it the right to build a spur line across Ottawa St. One of the conditions is that all the company's rights in the town will expire in 1922, when the other franchise held in the town and the company's Windsor franchise will expire. (Sept., pg. 364.)

Windsor, Essex & Lake Shore Rapid Ry.—We are officially advised that about 1,500 ft. of track on Arthur St., Windsor, Ont., is to be paved this season, and that it was expected that the work would be started by Sept. 30. C. P. Cooper, Windsor, Ont., is Superintendent. (Mar., pg. 113.)

Electric Railway Notes.

The Three Rivers Traction Co. is going to dispose of two one-man cars which have been replaced in operation by new equipment.

The Edmonton, Alta., City Council has decided to apply to the Alberta Legislature next session for authority to use a zone system of fares.

The Toronto City Works Commissioner has recommended that the civic railway employes be paid the same rates of wages as were granted Toronto Ry. employes recently by arbitration.

Adam Shortt, of Ottawa, who was appointed to investigate transportation conditions as affecting the British Columbia Electric Ry., is expected to report early in October.

The Levis County Ry. has extended its freight service and is now delivering freight to any part of Levis, Que., at 10c per 100 lb., with a minimum charge of 10c for each consignment.

The Regina, Sask., Municipal Ry. is considering the adoption of one-man cars and will raise its fare to a straight 5c if the city council consents. The matter was discussed in a preliminary manner, Sept. 1.

The Calgary, Alta., City Commissioners, on Sept. 17, recommended the council to authorize the expenditure of $2,537.50 on the purchase of 50 new manganese steel car wheels. The Commissioners had a tender for them from the United States.

The London St. Ry., in order to release men for harvest work, took off five cars recently, and by a little speeding up gave

practically the same service. The move, however, was not popular, and it has been questioned whether the men released did actually go to the harvest fields.

The Calgary, Alta., Board of Trade is advocating the elimination of noises on the city's streets as far as possible, and suggests that among other things the "shrieking" of the whistles and the "clanging" of the bells of the street cars could be modified.

The Ontario Railway and Municipal Board has ordered the Toronto Suburban Ry. to protect several of the crossings along it route between Lambton and Guelph, by means of red lights at night, and positive stops during the day, as well as limiting the speed of cars at all crossings.

During the summer bathing season, from July 3 to Sept. 1, the Toronto Ry. carried free on its cars, from various points in the city, to the free bathing stations under municipal control, 43,827 children, about 3,500 less than in 1916. The free cars were run on 53 days, with an average of 827 children a day.

A Goderich, Ont., report states that it is expected the sale of the old Ontario West Shore Ry.'s property and effects will realize about $200,000, or 50% of the amount of the bonds guaranteed by the municipalities. The clearing up of the property is being carried out by the Hydro Electric Power Commission of Ontario.

The Moose Jaw, Sask., Electric Ry. is considering one-man car operation. An opinion favorable to its adoption already exists in Regina, but the Saskatchewan law, which prohibits the operation of electric cars with a smaller crew than two men, stands in the way of anything being done. In the event of the matter being considered favorably by the Moose Jaw City Council, an application will be made to amend the law at the next session of the legislature.

Mainly About Electric Railway People.

M. W. Kirkwood, heretofore Superintendent, Galt, Preston & Hespeler St. Ry., and Lake Erie & Northern Ry., Galt, Ont., has been appointed General Manager of both companies, succeeding the late Martin N. Todd in the latter company. Office, Galt, Ont.

M. Milne Todd, heretofore Assistant to Superintendent, Galt, Preston & Hespeler St. Ry., and Lake Erie & Northern Ry., Galt, Ont., has been elected President, Galt, Preston & Hespeler St. Ry., succeeding his father, the late Martin N. Todd, and also Vice President, Lake Erie & Northern Ry.

M. M. Inglis, Manager, Port Arthur, Ont., Public Utilities Commission, which operates the Port Arthur Civic Ry., has also been appointed Secretary, pro tem, in place of G. H. Rapsey, who has resigned to take charge of the Ontario Government's fishing operations in Lake Nepigon. Mr. Rapsey, who is the commission's chairman of finance retains his position as a commissioner. His term of office will expire on Dec. 31, unless he should be re-elected.

A. W. McLimont has been appointed Geenral Manager, Winnipeg Electric Ry., Winnipeg, vice Wilford Phillips, resigned on account of ill health. He was born at Quebec, Que., and has held some important positions in connection with electric railways in the United States. He was for some time electrical engineer under the New York Public Service Commission, and when rehabilitation of the Chicago & Milwaukee Electric Ry. was undertaken a few years ago, he was retained as engineer. He has latterly been engaged on the Michigan United Ry. System.

Lt. Col. G. C. Royce, who went to England, in command of the 255th Battalion, a few months ago, has returned to Toronto, the battalion having been absorbed into the 12th Reserve Battalion, at East Sandling, Kent. He has resumed his duties as General Manager and Secretary-Treasurer, Toronto Suburban Ry., and is devoting much of his attention at present to the operation of the Lambton-Guelph extension, which has been taken over from the construction department, it having been operated heretofore under the charge of the Chief Engineer, H. T. Hazen.

Wilford Phillips, who has retired from the position of General Manager, Winnipeg Electric Ry., on account of ill health, was born in Prince Edward County, Ont., Oct. 8, 1858, and commenced electric railway work on the Metropolitan Ry., North

The Late Martin N. Todd
President, Galt, Preston & Hespeler St. Ry., and General Manager, Lake Erie & Northern Ry.

Toronto, Ont., now the Metropolitan Division, Toronto & York Radial Ry., in Mar., 1890, in which service he remained until July, 1892, since when he has been, to Mar., 1893, Engineer and Superintendent, North Toronto Water Works and Electric Light; Mar., 1893, to 1896, Mechanical and Electrical Engineer, Niagara Falls Park & River Ry.; 1896 to June, 1900, Manager, same company; Aug., 1900, to Oct. 1, 1917 General Manager, Winnipeg Electric Ry., Winnipeg.

Martin N. Todd, President, Galt, Preston & Hespeler St. Ry., and General Manager, Lake Erie & Northern Ry., who died somewhat suddenly at his house, Caverhill, Galt, Ont., Aug. 29, aged 59, had been in failing health for two or three years and spent several months in the south last winter, but after returning continued to attend to business more or less until a few days before his death. He was born in Galt, July 27, 1858, was educated at the Collegiate Institute there under the late Dr. Tassie and in 1875 entered the old Great Western Ry.'s service at Hamilton. On returning to Galt a few years later, he was appointed town ticket agent, G.T.R., and subsequently joined his father, the late Thos. Todd, in the milling, malting and commission business, and assisted him during the promotion and construction of the Galt, Preston, & Hespeler St. Ry. After his father's death in 1899, he was appointed President and General Manager of that line and in April, 1915, he was also appointed General Manager, Lake Erie & Northern Ry., which was then in process of construction and was completed and put in operation under his management. He had a large farm near Galt, where he specialized in raising horned Dorset sheep, and he was an enthusiastic fisherman and small game hunter, and was widely known throughout Canada, especially in transportation circles, enjoying great popularity. His funeral was largely attended, including many prominent transportation officials from Montreal, Toronto, etc.

Earle L. Milliken, heretofore Manager, Cape Breton Electric Co., Sydney, N.S., has been appointed Manager, Houghton County Traction Co. and Houghton County Electric Light Co., Houghton, Mich. He was born at Bideford, Me., May 15, 1888, and was educated at Springfield Technical High School and the University of Maine, whence he graduated in 1908 with the degree of B.S. in electrical engineering. During the summers from 1903 to 1908, he engaged in various work, respectively as follows: General electric work, Westbrook Electric Light & Power Co., Westbrook, Me.; in the brass department, Coffin Valve Co., Mepouset, Me.; in tool making department, Chapman Valve Co., Indian Orchard, Mass.; rodman, Maintenance of Way, Bangor & Aroostook Rd.; in machine shop, Portland Co., Portland, Me., and on inventory work, South Massachusetts Telegraph & Telephone Co. From Sept. to Nov., 1908, he was engaged in Stone & Webster's statistics department, Boston, Mass., and entered the service of the Cape Breton Electric Co., which is managed by Stone & Webster, Nov., 1908, since when he has been, to Oct., 1909, clerk to Manager; Oct., 1909, to Feb., 1911, Superintendent of Distribution and Electrical Engineer; Feb., 1911, to May, 1912, Superintendent, Light and Power and Electrical Engineer; and from May, 1912, to Sept., 1917, Manager. He is a member of the Canadian Electric Railway Association's executive committee, having been elected at the annual meeting in June.

The St. John's (Nfld.) Ry. is applying to the City Council for authority to extend its car lines in several directions. The council appointed a special committee to confer with the company upon the following and any other matters which may arise, viz.: easy and cheap access to all outlying points of the city; cheap fares east and west to Quidi Vidi Lake and Bowring Park; access to cheap sites suitable for erection of workingmen's homes; cheap special rates for workingmen's tickets; reduced rates and further extension of the city lighting system; possible reduction in private lighting if the operation of the street railways proves as successful as anticipated.

Marine Department

Freight Steamship Building at Port Arthur.

As previously stated in Canadian Railway and Marine World the s.s. Ugelstad was launched at the Port Arthur Shipbuilding Co.'s yards at Port Arthur, Ont., on June 23 and the s.s. War Fish on Aug. 4. Both vessels were ordered by Jas. Playfair, of Midland, Ont., and the War Fish is being taken over for the British Government by the Imperial Munitions Board. Following is a description of the vessels:

The hull is of the following principal dimensions: Length over all, 261 ft.; length between perpendiculars, 251 ft.; breadth moulded, 43½ ft.; depth moulded, 28 ft. 2 in. It is of the single deck type, with poop bridge and forecastle, steel deck house on bridge, and deck and chart room on top of deck houses, with navigating bridge. The hull is built on the transverse system, with the propelling machinery amidships, with the coal bunkers in wings. There are 2 cargo holds, with 2 hatches to each, one hold extending from the collision bulkhead to the boiler room bulkhead, and the other from the engine room bulkhead to the after peak bulkhead and there is a water bottom, 2 ft. 9 in. deep, from the collision bulkhead to the after peak bulkhead. The construction is for the highest class of British Lloyd's ocean service, and in accordance with the British Board of Trade's requirements. The size of the machinery space has been arranged to approximate 13% of the gross tonnage, thus attaining a reduction of 32% from capacity tonnage.

The Steamship Ugelstad prior to launching.

The hull is built with flat plate keel and bilge keels, the latter extending for about 100 ft, amidships, and are of plate 9 in. deep, connected to the shell with angle bars fitted on short lengths, extending from butt to button shell, the plate being continuous. The hull has a straight stem and elliptic stern. Channel frames are fitted, and extend from tank margin to main deck, and alternately to bridge deck, without hold stringers or 'tween deck beams. Plate floors are fitted on every third frame, except in engine and boiler space and forward, of 3/5s length, which are 24 in. centres. The propeller frame is according to Lloyd's requirements, with rudder post extending to main deck, to which it is attached by angles and deep transom plates. The rudder is of the single plate type, with arms alternately on the port and starboard side. The hull is divided by 4 watertight bulkheads, and a watertight sliding door is fitted in the engine room bulkhead, to give access to the tunnel. There is a screen bulkhead between the boiler and engine rooms, with door and portable plate for drawing the condenser tubes.

The engine foundation is built up of plate and angles, with girders under the foundation, to line up with the fore and aft girders on the water bottom. The boiler foundations are of longitudinal plate girders, with large double angles on top edge, and connected to tank top with double angles at bottom. The deck house on the bridge is of steel, 7 ft. high, of plating 12.2, stiffened with 3 x 3 x 6.1 angles, as are also the engine and boiler castings. The flying bridge is built from the roof of the chart house to the ship's sides, and is 4 ft. wide, carried on angle iron framing supported on angle iron stanchions. Steam windlass is 8 x 8 in., fitted with hand attachment and friction brakes. The steam steering engine, 6 x 6 in., is placed in the after end of the engine casings, with the horizontal shaft protruding through the after side, with the bracket and chain drum on deck. Two 22 ft. lifeboats, and one 18 ft. working boat, are to be provided, together with life belts and life buoys as required by law. The bridge deck will provide accommodation for the captain's, and first and second officers' quarters, which, with the accommodation for the crew, are to be complete with every modern convenience. The electrical installation will include one 7½ k.w. generator, with equipment for lighting the whole vessel, the sidelights to be fitted for electric light as well as for oil.

The propelling machinery, also built by Port Arthur Shipbuilding Co., will consist of engines of the single screw, 3 cylinder, 3 crank type, with cylinders 20, 33½, and 55 in. diam., by 40 in. stroke, developing about 1,400 i.h.p. at 80 r.p.m. Steam will be supplied by 2 boilers, each 14 ft. diam. by 12 ft. long, built for natural draught, at 185 lb. pressure. The boilers will be equipped with corrugated furnaces, 42 in. inside diam., with separate combustion chamber for each furnace.

The Port Arthur Shipbuilding Co. is also building a number of other full canal size, ocean going steamships similar to the Ugelstad and War Fish and has also considerable government work on hand.

Regulations Respecting Desertion from Merchant Vessels.

Whereas a large amount of trouble and delay has been caused by the prevalence of desertion and improper absence among the crews of merchant vessels lying in Canadian ports, whereby the carriage of urgently required munitions, provisions and other essential stores for the British and allied governments has been seriously hindered, and evidence has been produced to the Minister of Naval Service both of the existence of this state of affairs and the gravity of its consequences, in written reports from responsible officers concerned, an order in council has been passed amending par. 28 of the Defence of Canada Order, 1917, to include all ships or vessels carrying government cargo or passengers, and to provide for keeping in custody deserters apprehended. A new paragraph is also added, numbered 28A, providing that no seaman lawfully engaged to serve on board any ship belonging to, or chartered, or requisitioned by the Admiralty, or by the Dominion Government, or upon any ship which has embarked, or is about to embark cargo belonging to any British or allied government, or which has on board any British or allied government passengers, shall be absent from his ship, whether upon duty or otherwise, without a written pass which shall state the period of his authorized absence, signed by the master, mate, purser or first engineer, and any such seaman so being absent without such a pass, or being found without the same in his posession, shall be guilty of an offence against this order and subject to the exercise of the authority conferred by sec. 28, as if absent from his ship or duty without leave.

Arrangements for Moving Northwestern Grain Crop.

Cleveland, Ohio, press dispatch, Sept. 11.—"All uncertainty regarding the ability of the government to move the grain crops from the northwest to lower lake ports was removed today after a meeting here of the Lake Carriers' Association, representatives of the Canadian and United States Grain Commissions, and J. H. Barnes, director of the U.S. Government's Food Commission's grain division. The vessel owners not only assured the government of plenty of tonnage, but accepted a rate that was named by Mr. Barnes. The rate from ports at the head of Lake Superior to Buffalo was fixed at 4½c a bushel for the regular season of navigation, viz., up to midnight, Nov. 30. The rate for December loading and storage will be fixed at a later meeting. The action taken at the meeting means that all vessel owners will have to do their share and that boats that have been operated exclusively in the ore trade will have to carry grain if they are needed. The business will be pooled and handled by the Duluth Grain Chartering Co."

The Dominion Department of Public works has cancelled its call for tenders for dredging at Port Maitland.

Government Vessels for Pacific-Atlantic Service.

As previously stated in Canadian Railway and Marine World, the Dominion Government some months ago awarded two contracts for the construction of wooden auxiliary power schooners, for operation between Pacific coast ports and Atlantic coast ports, via the Panama Canal, one to Wallace Shipyards, Ltd., North Vancouver, and the other to Lamond & Harrison, Vancouver. When this matter came before the House of Commons, Sept. 6, on a vote for $600,000 for the building of these vessels, the Minister of Railways stated that the tenders had been accepted and the contracts let, but the contractors had not put up the required bonds and had asked to be released on the ground that the Imperial Munitions Board had taken over six wooden shipyards in British Columbia and had contracted for the whole output of the British Columbia lumber mills for the next nine months. They therefore claimed that it was impossible to obtain the necessary lumber to build these vessels, and that materials and labor had so largely advanced that they could not carry out their tenders, but they offered to build the vessels on a basis of cost, plus 10%. The Minister added that the contracts had been cancelled and no other contracts had been entered into.

Copies of the contracts submitted to Parliament show that the vessels were to cost approximately $230,000 each. The contracts were entered into by the Minister of Railways, under authorizing orders in council of Nov. 24, 1916, and Jan. 30, 1917, the one with the Wallace Shipyards, Ltd., on Mar. 8, and the other with Lamond & Harrison, June 1. It was the intention of the two contractors in the latter case to turn the contract over to the Harrison & Lamond Shipbuilding Co., formed at Vancouver recently. Each contract provided for the construction and delivery of one wooden auxiliary sailing ship. Delivery on the first named contract was to be made by Feb. 28, 1918, and on the second contract by June 1, 1918. The dimensions of the vessels were to be: Length of keel, 225 ft.; breadth, 44 ft.; depth of hold, 19 ft. In case of failure to deliver the vessels by the dates named, or by dates otherwise authorized, a penalty of $50 a day was fixed, and $50 premium was to be paid for each day gained in delivery. It was provided that the contractor was to provide and install all propelling machinery, such machinery to be similar to that installed in vessels built for the Canada West Coast Navigation Co., or of similar Diesel type, or of a type satisfactory to the government's architect, and of equivalent horse power, and to comply with Lloyd's standard for seagoing oil fuel, internal combustion engines.

The price to be paid for each vessel was based on $48 per ton of 2,240 lb. deadweight cargo capacity, which was to be estimated on the usual allowance for cargo, fuel, fresh water and stores, and $110,000 was to be paid for machinery and plans. Payments were to be made as follows: Upon the execution of the agreement and furnishing of bond, $5,000; when square frames set up, $20,000; when ceiling and deck frames in and deck laid, $15,000; when ship successfully launched, $15,000, or such portion thereof as was justified by the value of the work done. In respect of the propelling machinery and various additions and improvements, and necessary additions to the hull to produce a complete vessel fully equipped and launched and ready for sea the $110,000 was to be paid as follows: Upon certificate of the architect that satisfactory evidence had been produced to him showing actual amounts paid by the contractor for the propelling machinery and other equipment were to pay from time to time such amounts as had been certified to have been paid, and to have a lien upon such machinery, etc., for such payments, which should not exceed in any event $90,000. Progress payments upon the cost of installation of the machiner yand other equipment were to be made from time to time upon the architect's certificate as to the amount of work done. The balance of the total price, if any, respecting both hull and machinery, was to be paid on delivery of the ship and the acceptance of same. A further clause of the contract provided that any bonus or subsidy that might be granted by British Columbia, or by the Dominion, on account of the construction or operation of the vessel, should be the property of the government, whether or not such was payable to the contractor, and the contractor agreed that he would comply with all requirements that might be necessary to procure such bonus or subsidy.

It was intended that the vessels to be built for the government should be similar in all respects to those built recently for Canada West Coast Navigation Co. In case of those vessels, the construction price was based as follows: Wooden hull, 2,500 tons at $48, $120,000. Additional work found necessary after contracts were signed, in order to meet Classification Society's and Canadian Steamboat Inspector's requirements:

Additional anchors, increased thickness of cable, increased equipment of wire rope, towing lines both steel and manilla ...	$1,264
Increased thickness of wales and bilge fastenings . .	3,000
Additional knees at mast beams	3,200
Cost of carbolineum at butts and edges in way of frames	800
Increased height of hatch coamings	400
250 tons salt, cost in place of $15 a ton ..	5,750
Additional strong backs at all hatches ...	2,000
Increased size of lifeboats, boat davits, and additional lifebuoys, lifesaving equipment, sea anchors, buoyant tanks, etc. .	1,000
Additional fittings in cabins	1,000
Increased size and weight of windlass to take care of increased size of anchors and chains . .	365
Additional stiffening in fuel oil tanks ..	4,600
Additional diameter of rigging wire, and rearrangement . .	500
2 water tanks	2,500
2 fuel tanks . .	3,000
Increased size of donkey boiler	1,500
Additional piping of fuel and water tanks	1,650
Changes in style of pumps	350
Day tanks, air tanks and lubricating tanks	1,000
Changes in design and constructio n of winches and fittings, all cut gears, 4 winches at $150	600
Copper expansion bends in steam lines to winches and windlasses	565
	$35,044

Propelling Machinery, etc.

2 165-h.p. Diesel engines, including air compressor, electric generating, f.o.b. Vancouver, including freight and insurance . . .	$50,000
Built to comply with Classification Society's standards for seagoing engines.	
2 sets shafting and propellers	5,300
Cast steel stuffing boxes, stern glands, etc., with lignum vitae bushings and fittings in place .	850
Installation of propeller shafting struts and intermediate shafting .	2,500
Additional diameter of shafting	400
Fitting continuous bronze liner to shafts..	1,200
2 cast steel propeller struts	700
Installation of engine	5,000
	$73,950
Total . .	$228,994

United States Restriction on Coal Exports.

Washington, D.C., press dispatch, Sept. 14.—"Continued export of coal to Canada in large amounts through Great Lakes ports at the expense of the Northwestern United States will be checked immediately by the Fuel Administration. H. A. Garfield. the Fuel Administrator, has requested the Export Administration Board to permit no more coal to be shipped from the country except under license restrictions, and asked that no licenses be granted unless they are approved by the Fuel Administration. Coal heretofore, along with other U.S. products, has gone to Canada under blanket licenses issued by Collectors of Customs.

"'The Fuel Administration,' said Mr. Garfield, 'does not intend to cut off Canadian exports, but with this supervision it will be able to equalize the distribution of coal and see that the U.S. northwest and Canada both get their fair shares.' Complaints coming to Mr. Garfield that much of the coal going to the lakes was not reaching the northwestern States prompted an investigation, which revealed that a great part of it was reaching Canada. In the period between Aug. 24 and Sept. 8, out of a total of 1,755,812 tons of coal that reached lake ports, 530,973 tons went into Canada. This is far in excess of the proportion of Canadian shipments by lake boats in normal times. While Canada has been piling a reserve store of coal, the northwest is threatened with a shortage this winter, which, it is declared, may force industries to close down."

Ottawa press dispatch, Sept. 21.—An arrangement has been made with Dr. Garfield, U.S. Fuel Controller, whereby no general licensing system will be instituted as far as Canadian imports are concerned, but the authorities at Washington will call for periodical statements from U.S. exporters showing the daily movement of coal to Canada. No serious inconvenience is anticipated as the result of these arrangements.

British Standardized Ships.—London, Eng., press dispatch, Sept. 17: "Complete success has attended the trial of the first standardized ship built to the British Government's order. It was of a most exhaustive nature, and experts are unanimous in their praise of the vessel which, with its sisters, will now be taking to the water in quick time, and is destined to play an important part in the campaign against submarines. The standardized ship has been designed to provide a good style of cargo carrier in the shortest possible time, with the minimum expenditure of material. The keel was laid last February, and in less than six months the vessel was fully loaded and ready to go to sea. During the trial trip, Sir Joseph Maclay, the Shipping Controller, made a statement with regard to the new ships, for the construction of which he and his advisers are responsible."

English Channel Car Ferry Service.—The British Government is credited with the intention of inaugurating a car ferry service across the English Channel in the neighborhood of Dover Strait. I. W. Watts, Windsor, Ont., J. McCarthy, Sandwich, Ont., and G. Plant, London, Ont., are stated to have been engaged by the British Admiralty for this purpose, each of them having had considerable experience in car ferry operation on Lake Michigan.

United States Government Shipbuilding, Commandeering and Purchasing.

The U.S. Shipping Board sent the following statement relative to the shipbuilding programme to the Secretary of the Treasury recently for transmission to Congress:

SHIPBUILDING PROGRAMME.

	No.	Tonnage.	Estimated cost.
Ships contracted for.	433	1,919,200	$285,000,000
Ships ready to be contracted for when funds are available	452	2,968,000	455,500,000
Ships under negotiations	237	1,281,400	194,000,000
			$934,500,000
Miscellaneous vessels	150	1,800,000	300,000,000
Organization and other miscellaneous expenses			35,000,000
Amount authorized by Congress, June 6, 1917, ($300,000,000 appropriated)			550,000,000
Amount to be authorized for building programme immediately in sight, making no allowance for changes in cost of labor or material			719,500,000

COMMANDEERING PROGRAMME.

For commandeered ships, amount required	$515,000,000
For commandeered ships, amount authorized by Congress, June 6, 1917	250,000,000
Balance requiring authorization by Congress	$265,000,000

PURCHASE PROGRAMME.

For vessels to be purchased other than under construction or commandeered	$150,000,000

SUMMARY.

Total amount, in round figures, to be purchased in addition to amounts already authorized	$265,000,000
For construction of new vessels	719,500,000
For purchase of new vessels	150,000,000
Grand total	$1,134,500,000
Amounts desired to be appropriated for remainder of fiscal year 1918:	
For commandeered vessels	$365,000,000
For building programme	400,000,000
For purchase of vessels	150,000,000
Total	$915,000,000

Details of the Programme.

Washington, D.C., press dispatch, Sept. 7.—"The U.S. Government will build a great fleet of merchant vessels of from 10,000 to 12,000 tons, capable of attaining a speed of 16 knots or better, in its effort to defeat the German submarines, supply its troops in Europe and carry foodstuffs and munitions to the allies. Contracts already entered into for ships of smaller capacity and lower speed will be carried out, but practically all of the millions which Congress has been asked for, in addition to the original appropriation of $500,000,000 for construction, will be devoted to the fast ships, unless plans now in the hands of the Shipping Board go awry. Delay in the letting of contracts for fabricating yards to be owned by the Government, it is stated, was caused in part by the fact that, under the new plans, changes would have to be made. It is possible also that additional yards will be constructed in order to turn out the new fleet in the shortest possible time. Not less than 150 cargo ships, aggregating from 1,500,000 to 2,000,000 tons, will be built under the Shipping Board's new plan ,and not one of them will make less than 16 knots an hour, while many of them will be capable of 18 knots or more.

"Diesel engines and engines of that type will be used as far as is possible. It is said that a number of the Diesel engines have been brought to this country, and that certain manufacturers have been hard at work for some time developing a standard engine along the same lines. They permit of greater speed and a tremendous saving in fuel. The original contracts were for ships of from 5,000 to 7,000 tons, which would be capable of considerably less than 16 knots an hour, and which, with the development of the German submarines, might well have been helpless unless guarded by large fleets of fast cruisers and destroyers. Careful investigations made by Chairman Edward N. Hurley, of the U.S. Shipping Board, and Secretary Redfield, of the Department of Commerce, however, showed that vessels capable of 16 knots an hour or more were practically free from successful submarine attack, and that none had been sunk since the latest inventions to cloud, by smoke bombs or otherwise, the 'eye' of the submarine, had been used. A comprehensive report of this situation was prepared, and, as a result of that report, the new plan of construction was formulated."

Government Shipbuilding Yards.

Washington, D.C., press dispatch, Sept. 13.—"Contracts for construction of a government-owned shipbuilding yard at Hog Island, Pa., and for the construction therein of 50 fabricated steel merchant vessels, were let by the Emergency Fleet Corporation today to the American International Corporation. These contracts are the first actually signed for the three new plants in which the government will have built a large number of fabricated ships. The Hog Island plant will cost slightly less than $20,000,000. The other contracts will go to the Submarine Boat Corporation for a plant at Newark, N.J., and to the Merchants' Shipbuilding Co. for one at Chester, Pa. The first of the 50 ships will be completed by the American International Corporation within 10 or 11 months, and the entire number will be finished probably within 15 or 16 months. Long before they are finished, however, the Shipping Board, in all likelihood, will have asked for additional money to build more ships."

New York press dispatch, Sept. 16.—"The Submarine Boat Corporation announces that it has entered into a contract with the Emergency Fleet Corporation for the immediate construction of 50 steel cargo ships, which will be supplemented later by another contract for 150 more of the same type. The ships will be built in the metropolitan district in a plant which will be among the largest in the country. The first keels will be laid in December, it is said, and the first launching will be in February. Under the corporation's plans, when the plant is in full operation, deliveries will be at the rate of one vessel every two days."

White Oak for Ship Construction.

Shipyards building wooden ships for the U.S. Government are in the market for extra large white oak construction timber or logs of good quality. The 2,000-ton ships now building each require 2 rudderposts of this species, 14 x 24 in., 40 ft. long. Logs measuring 28 in. in diameter at the small end will cut out such timbers and are worth from $50 to $60 per thousand board feet measured in the log. Sticks hewed or sawed to this size will bring $70 to $80 per thousand board feet loaded on the cars within 100 to 200 miles of the shipyards. Sticks squared to the size mentioned above contain 1,120 board feet, and would, therefore, bring from $78 to $90 each, f.o.b. cars at loading point. Though these prices apply to the south Atlantic and gulf shipyards, it is probable that they would also hold good for those located in the north. The yards are also in need of other white oak structural timbers for shaft logs, horn timbers, deck and chock rails, and keel shoes. These range in size from 6 x 8 in., x 20 to 30 ft. long, to 14 x 14 in., 18 ft. long. Farmers having white oak trees that will produce timbers of these sizes are urged to take advantage of the demand for such material and get in touch with shipbuilding concerns.

Customs Drawback for Shipbuilding in Canada.

An order in council was passed, Oct. 21, 1916, providing for the granting of a drawback of customs duty on articles used in the construction of vessels built in Canada, dating from Nov. 1, 1916, not exceeding 99% of the customs duty paid. The material concerned is to be used in the original construction in Canada of ships and vessels measuring over 500 tons gross tonnage, and when such ships or vessels are authorized by order in council to be exported for registry outside Canada, or are British registered in Canada, and built to obtain a class in Lloyd's, Bureau Veritas, British Corporation, or other recognized classification satisfactory to the Minister of Customs. Such drawback is in lieu of any drawback based on a specific rate per registered ton, and the claimant must be the builder of the vessel, and the drawback is paid only on ships or vessels which have within themselves the power of independent navigation, either by means of sails, steam or other motive power.

A further order in council was passed, Sept. 11, 1917, amending the order of Oct. 21, 1916, by providing that it shall apply to drawback on imported materials used in the original construction of ships and vessels over 80 tons gross tonnage, built in Canada, on and after Sept. 1, 1917.

The s.s. **Turret Crown**, owned by the Coastwise Steamship and Barge Co., is reported to have been sold to the Clinchfield Navigation Co., of New York, representing the Oriental Navigation Co., Nantes, France. She was built at Sunderland, Eng., in 1895, of steel with double bottom for winter ballast. Her dimensions are, length 253 ft., breadth 44 ft. 4 ins., depth 19 ft. 4 ins.; tonnage, 1827 gross, 1,142 register. She is equipped with triple expansion engines with cylinders 22, 36 and 59 ins. diar. by 39 ins. stroke, 1,100 i.h.p. at 70 r.p.m. and supplied with steam by 2 Scotch boilers 14 by 11 ft. at 180 lbs. She was equipped with new boilers in 1912 by the Western Dry Dock and Shipbuilding Co., and was purchased by the Coastwise Steamship & Barge Co., from Turret Crown Ltd., Toronto, one of the Mackenzie, Mann & Co.'s interests. For a number of years she was operated on the Great Lakes, and latterly was run between British Columbia and Puget Sound ports. She is being taken to New York and thence to Europe, where she will be handed over to her new owners.

Grain Rates for U. S. Lakes Service.—A Cleveland press dispatch states that J. H. Barnes, director of the U. S. Food Commission's grain division, has named 4½c a bush. as the grain rate from the head of Lake Superior to Buffalo, for the regular season to midnight Nov. 30, and that this has been accepted by vessel owners. The rate for December loading and storage is to be fixed later.

Atlantic and Pacific Ocean Marine.

The s.s. Grampian Range, owned by Furness, Withy & Co., is reported to have been sunk a few weeks ago by a German raider.

The Nippon Yusen Kaisha, it is reported, has announced that a line of steamships will be put in operation shortly between Japan and Vancouver.

The s.s. War Viceroy, built in Japan recently for the British Government, was expected to arrive at Vancouver towards the end of September, where, it is stated, she will load Alberta wheat for Europe by way of the Panama Canal.

Holt & Co. have announced the resumption of sailings of the Blue Funnel Line vessels to Pacific coast ports, the first vessel arriving from the Orient about Nov. 19. These sailings were interrupted for a time owing to the demands of the war.

The schooner Minas Queen, owned by W. S. Job & Co., and registered at Parrsboro, N.S., was reported, Sept. 10, to have been sunk by a German submarine, while en route from a U.S. port to France in ballast. Only one member of the crew was saved. She was built at Parrsboro, N.S., in 1916, and was on her first ocean voyage.

The s.s. Bowlar, which has been anchored at Vancouver for Cseveral years, is reported to have been sold, by local owners said to be Japanese, to the French Government for $800,000. The vessel was originally a British one, and was purchased from British interests by Admiral Dewey at Manila, during the American-Spanish war, and used as a collier. She has been at Vancouver, and as a steamship shewas considered worthless, having been stripped of all fittings. Latterly she has been thoroughly overhauled and repaired, and is still at the Wallace shipyards.

Maritime Provinces and Newfoundland.

The Dominion Deaprtment of Public Works received tenders, Sept. 25, for dredging at West St. John, N.B.

The s.s. Keith Cann was launched at Shelburne, N.S., Sept. 18, for Hugh Cann & Sons, Yarmouth. On completion she will be placed on the route between Yarmouth and St. John.

The Newfoundland Government has entered into a contract with E. Barry, Summerside, Bay of Islands, for a steamship service for the Bay of Islands route for a payment of $200 a week.

The Board of Pilot Commissioners for the pilotage district of Buctouche, N.B., is constituted as follows: M. McLaughlin, F. T. Richard, H. Berthe, H. Irving and W. Robichaud, the last mentioned acting as Secretary-Treasurer.

The Tow Boat Owners' Association of British Columbia is being incorporated under the B. C. Benevolent Societies Act, to further the interests of tug boat owners in the province and to assist in the promotion of commerce in British Columbia. The first directors are to be: C. A. Prowse, Vancouver, President; G. McGregor, Victoria, First Vice President; E. Gilley, New Westminster, Second Vice President; E. J. Coyle, J. Walters, Vancouver, directors, and P. A. Jones, New Westminster, Honorary Secretary-Treasurer. The head office is to be at Vancouver, and the annual meetings are fixed for Aug. 17.

Province of Quebec Marine.

The last of the wrecked Allan Line s.s. Bavarian is to be removed from the beach at Indian Cove, Quebec, where it has been lying for about 12 years. The forward part of the wreck was sold last year, and the stern part has now been sold. The purchaser, in both cases, was J. G. Mayer, Vice President, Dominion Iron & Wrecking Co., Montreal.

The addition to the Quebec Harbor Commissioners' grain elevator on the Louise Embankment, Quebec, will double its capacity, making it available for 2,000,000 bush. There are 62 bins, each 18 ft. diar., and 93 ft. high, and grain will be delivered from the shed to vessels at the rate of about 60,000 bush. an hour. The new portion will be ready for operation in January.

The Dominion Public Works Department will receive tenders to Oct. 12 for the purchase of the Steam tug Montmorency. She was built at Sorel, Que., in 1894 and named Nile. She is screw driven by engine of 22 n.h.p., and her dimensions are, length 71.1 ft., breadth 11.1 ft., depth 4 ft.; tonnage, 28 gross, 19 rfegister. The engine is triple evpansion of the Robert type, with pipe boiler.

Ontario and the Great Lakes.

The C.P.R. s.s. Prince Charlotte is stated to have been withdrawn from the Gulf service for overhaul and repairs, having stripped a propeller blade, Sept. 16.

The s.s. Saxona, owned by G. A. Tomlinson, Duluth, Minn., which was sunk in collision at Detour in the spring, has been raised.

It is reported from Sarnia that the s.s. Western Star, which was wrecked a few years ago in Georgian Bay, has been raised and taken to Little Current, Manitoulin Island.

The Governor General in council has approved a revised code of bylaws submitted by the Toronto Harbor Commissioners, for the regulation and control of navigation in Toronto Harbor, and also providing a tariff of wharfage on goods landed and shipped over the wharves.

The Northern Navigation Co.'s steamships Noronic and Waubic, and the s.s. Rochester, chartered from the American Interlake Line, were docked at Sarnia for the winter at the end of September.

The name of the s.s. Byron Whitaker, formerly owned by F. E. Hall & Co., Montreal, and now owned by Steamer Marian W., Ltd., a subsidiary of Canada Shipping Co., Montreal, has been changed to Marian W. She was built at Mount Clemens, Mich., in 1890.

The Northern Navigation Co.'s s.s. Noronic arrived at Sarnia,, Sept. 15, completing her last trip for the year, after which she went to Port Huron, where, it is stated, she is to be used during the first few days of October as an hotel for a female convention.

The shipping tonnage handled at Vancouver during August was as follows: Coasting, inward, 236,071; outward, 383,159; ocean, inward, 174,953; outward, 159,221. There weer increases over the figures for Aug., 1916, in each case, except in coastwise tonnage inbound.

The Montreal Transportation Co.'s barge Hiawatha foundered near Gallop Island, Lake Ontario, Sept. 20, during a gale, while loaded with coal, in tow from Oswego, N.Y., for Montreal. The captain of the barge was saved, and six persons, including two women and a child, were drowned.

The Nanaimo Canners & Packers Co., Nanaimo, B.C., is reported to have purchased five fishing vessels, named Dreadnaught, Esther, Wadena, Wamega and Wauneta, from U.S. owners. It is stated that the sale an dtransfer from the U.S. to Canadian register has been authorized by the U.S. Shipping Board.

The s.s. Midland Prince, owned by Canada Steamship Lines, Ltd., which arrived aat Duluth, Minn., Sept. 5, with coal, is said to have been the first Canadian vessel to carry a cargo of coal from Buffalo to Duluth, since the new arrangement respecting the operation of Canadian ves-

Comparative Grain Shipments from the Head of the Lakes.

The following table shows the total grain shipments from Port Arthur and Fort William, Ont., for the last four crop years, classified, and the number of cargoes shipped in Canadian and U.S. bottoms respectively.

	Wheat. Bush.	Oats. Bush.	Barley. Bush.	Flax. Bush.	Sample Mixed Grain. Lbs.	Elevator Screenings. Tons. Lbs.
1913-14—						
788 cargoes in Canadian vessels	64,121,076-43	25,276,164-16	5,942,638-35	2,218,179-14	26,076,624	16,854-1,808
350 cargoes in U.S. vessels	62,105,746-	14,351,323-22	4,031,185-25	9,927,058-05	.....	48,942-1,025
1,138 cargoes	126,226,822-43	39,627,488-04	9,973,824-12	12,145,237-19	26,076,624	65,797- 833
1914-15—						
617 cargoes in Canadian vessels	58,732,476-50	15,505,597-22	1,837,021-32	1,448,747-42	7,292,247	14,321-1,305
95 cargoes in U.S. vessels	18,813,926-40	1,130,202-21	690,854-07	3,035,977-01	.....	17,246-1,750
712 cargoes	77,546,403-30	16,635,800-09	2,527,875-39	4,484,724-43	7,292,247	31,568-1,055
1915-16—						
1,019 cargoes in Canadian vessels	109,516,553-..	42,622,650-33	5,852,179-18	1,033,99-34	12,458,833	6,991-1,885
830 cargoes in U.S. vessels	147,613,154-30	17,171,859-08	3,102,635-44	3,650,649-20	.....	67,233- 258
1,849 cargoes	257,129,687-30	59,794,510-07	8,954,815-14	4,684,648-54	12,458,833	74,225- 143
1916-17—						
683 cargoes in Canadian vessels	76,749,071-10	32,342,495-12	4,000,267-42	1,698,326-04	11,167,307	5,007-1,240
451 cargoes in U.S. vessels	61,824,965-40	15,344,189-30	2,810,565-30	4,659,769-45	9,967,119	20,256- 50
1,134 cargoes	138,574,036-50	47,686,685-08	6,810,833-30	6,358,095-49	21,134,426	25,263-1,290

sels in the U. S. coasting trade on the Great Lakes, came into effect.

The Canada Steamship Lines is reported to have notified the Mayor of Toronto that by an expenditure of $35,000 it has completed arrangements for handling coal during the winter, that a channel will be kept open in the harbor, and an effort made to bring in 40,000 tons for sale to the public, providing it can be secured.

The United States Lake Survey reports the levels of the Great Lakes in feet above mean sea level for August, as follows: Superior, 602.69; Michigan and Huron, 581.90; St. Clair, 576,62; Erie, 573.57; Ontario, 247.35. Compared with the average August levels for the past ten years, Superior was 0.05 ft. above; Michigan and Huron 1.10 ft. above; Erie 0.95 ft. above, and Ontario 0.75 ft. above.

The Reid Towing & Wrecking Co.'s steam tug James Reid, which foundered in Georgian Bay recently, will remain where she sank during the winter. Some reports state that as she sank in about 225 ft. of water, it is impossible to raise her. She was built at Wilmington, Del., in 1875, and named Protector. She was screw driven by engine of 94 n.h.p., and her dimensions were: Length, 117 ft.; breadth, 23 ft.; depth, 12 ft.; tonnage, 181 gross, 123 register.

A Trenton, Ont., press dispatch, says it is reported that another steamboat will operate out of Rochester another season, making the run to the Thousand Islands through the Bay of Quinte. The last boats to be on the service out of Rochester were the Captain and North King. Neither of these is now in use as a passenger boat. The scarcity of boats, as a result of the war, led to the abandonment of the route at the end of the 1915 season.

The name of the s.s. Stanstead, owned by Steamer Colin W., Ltd., a subsidiary of Canada Shipping Co., Montreal, has been changed to Colin W. This vessel was formerly owned by F. E. Hall & Co., Montreal, and was built at West Bay City, Mich., in 1881, and then named Clyde. She was caught in a storm on Lake Ontario, Sept. 11, and had her rudder damaged, and when making Kingston for repairs, she ran ashore there near the foot of Johnston St.

The Reid Towing & Wrecking Co.'s steam tug S. M. Fischer is reported to have been sold to the French Government and to have left Sarnia for Montreal, where she is to be fitted for ocean service. The price paid is said to be $265,000. The tug was built at Toledo, Ohio, in 1896, of steel, with spar deck, double bottom for watertight ballast and three watertight bulkheads. She is 140 ft. long, 31 ft. beam and 22 ft. deep, and equipped with triple expansion engines with cylinders 18, 30 and 50 in. diam. by 36 in. stroke, supplied with steam by 2 Scotch boilers, 11½ by 11½ ft., at 170 lbs.

The Farrar Transportation Co. has received $500 from the Dominion Naval Service Department, for distribution amo Service Department, for distribution among the crew of the s.s. Meaford for sinking a German submarine in the Mediterranean Sea, June 12. The s.s. Meaford has been under charter to the French Government for Mediterranean service for some time. She was en route from Swansea to a Mediterranean port, when sheencountered a German submarine near Sicily, and sank her with the third shell. Prior to entering this charter service, the eMaford had been engaged in the Great Lakes trade for the Farrar Transportation Co., since 1903, when she was built at Newcastle upon Tyne, Eng.

Little Current, Ont., press dispatch, Sept. 17.—The steel steamer Western Star of Buffalo, sunk in the autumn of 1915, with a cargo of coal, was raised and towed to a sheltered bay yesterday. The vessel lay in 80 ft. of water at the stern. Capt. Alex. Cummings, Superintendent for the Great Lakes Wrecking Company, built a timber cofferdam from the deck of the boat to the surface of the water and then pumped it out. As soon as the ship cleared from the bottom large tugs towed her into good bottom, and as she was raised she was pushed farther ashore to avaid accident. She was valued at $400,000 and was insured for $250,000.

It was stated in our August issue that the s.s. Collingwood, owned by the Farrar Transportation Co., Toronto, had carried 7,000 tons of ore between two U.S. ports in July, being the first vessel to run under the revised coasting regulations permitting reciprocal coasting privileges for Canadian and U.S. vessels. By an unfortunate error in "making up" the matter, it appeared under "Atlantic and Pacific Ocean Marine," instead of under "Ontario and the Great Lakes." We are now advised that the cargo contained 8,000 tons, that it was carried between Allones, Wis., and Ashtabula, Ohio, and that the s.s. Collingwood was the first Canadian vessel to carry a cargo of U.S. ore between two U.S. ports.

British Columbia and Pacific Coast.

The Pacific Steamship Co. is reported to have signed an agreement with the Canadian Northern Ry., whereby passengers can book from San Francisco to all points east at the regular transcontinental rates.

The Grand Trunk Pacific Ry. has deposited with the Dominion Public Works Department plant and description of site of wharf and plant it proposes to build in front of water front block G in Prince Rupert harbor.

The Union Steamship Co.'s s.s. Cassiar, which was wrecked at ingcombe Inlet, at the end of August, has been taken to the Wallace Shipyards, North Vancouver, for overhaul and repairs. The damage is estimated at $30,000. Temporary repairs were made at the scene of the casualty by the British Columbia Salvage Co.

The s.s. Coosa. which is being operated by the Pacific Steamship Co., between Seattle, Wash., and British Columbia ports, was formerly the German s.s. Loongmoon, and at the commencement of the war was interned by the United States at Honolulu, and taken over by the U. S. when that country declared war against Germany.

The Union Steamship Co.'s s.s. Cassiar was docked at the Wallace Shipyards, North Vancouver, Sept. 17, for examination after having struck a reef. The bottom of the hull was considerably damaged from stem to stern, the forefoot being crushed, and the keel for about 25 ft. was stove in, damaging the plates for some distance up on either side. The stern was knocked forward about 12 in., and the rudder was broken.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince George left Victoria, Sept. 12, on her 301st trip. Since being built, she has been operated regularly on the route between Seattle, Vancouver, Victoria and Prince Rupert, with the exception of a few weeks when she was under Admiralty orders at the commencement of the war. The s.s. Prince Rupert, a sister vessel, has recently completed her 250th trip, the continunity of her service having been broken by an unfortunate accident in the early part of the year, which necessitated her withdrawal for about three months.

The Grand Trunk Pacific Coast Steamship Co.'s steamships Prince Rupert and Prince George commenced their autumn schedule Sept. 23, the former leaving Victoria and Vancouver on Mondays, and Prince Rupert on Wednesdays, and the latter leaving Victoria and Vancouver on Thursdays and Prince Rupert on Mondays. The s.s. Prince John is operating on alternate Alaskan routes, and the s.s. Prince Albert is operating a freight and passenger service out of Vancouver approximately fortnightly.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during August

Articles			Canadian Canal	U. S. Canal	Total
Flour	Eastbound	Barrels	489,170	476,321	965,491
Wheat	..	Bushels	3,689,144	5,160,162	8,849,306
Grain	..	Bushels	1,093,395	3,011,899	4,105,294
Copper	..	Short tons	2,305	20,519	22,824
Iron ore	..	Short tons	1,960,891	8,252,065	10,212,596
Pig iron	..	.. ..	.....	2,800	2,800
Lumber	.	M. ft. b.m.	3,081	66,023	69,104
Stone	..	Short tons	.....	.....	.....
General merchandise	..	Short tons	11,284	32,111	43,395
Passengers	..	Number	4,242	3,427	7,669
Flour	Westbound	Barrels	.....	.....	.....
Grain	..	Bushels	.....	725	725
Coal, hard	..	Short tons	19,350	352,533	371,883
Coal, soft	..	.. ..	162,442	2,385,527	2,547,969
Iron ore	..	Short tons	.....	1,020	1,020
Manufactured iron	..	Short tons	1,758	17,102	18,860
Salt	..	Barrels	.....	53,667	53,667
Oil	..	Short tons	.....	.....	.....
Stone	..	Short tons	.....	.....	.....
General merchandise	..	Short tons	37,195	141,326	178,521
Passengers	..	Number	5,356	3,037	8,393
Summary					
Vessel passages		Number	852	2,692	3,544
Registered tonnage		Net	1,766,089	8,074,706	9,840,795
Freight—Eastbound		Short tons	2,158,683	8,682,110	10,840,793
.. —Westbound		..	220,745	2,905,570	3,126,315
Total freight		..	2,379,428	11,587,680	13,967,108

Shipbuilding Activities Throughout Canada.

Steamship Building for British Government.

Cameron-Genoa Shipbuilders, Ltd., has completed the framing of the second of the four wooden steamships being built for the Imperial Munitions Board. The ceiling and planking of the first hull is well under way. It is anticipated that the first vessel will be ready for launching early in December. The company only undertakes the construction of the hulls, and as soon as these are ready they will be taken to a central assembling plant which is to be located at the Ogden Point piers.

J. J. Coughlan & Sons, Vancouver, B.C., expect, it is stated, to launch the second steel steamship to be built on the Pacific Coast for the British Government, early in November. The first one, the s.s. War Dog, was built by Wallace Shipyards, Ltd., and has already been described and illustrated. The second will be named War Champ.

The **Foundation Co.** has the framing of its first wooden steamship placed and the framing of the second practically so.

The Three Rivers Shipyards, Ltd., which was incorporated under the Dominion Companies Act, Aug. 15, 1917, with authorized capital of $49,000, and office at Three Rivers, Que., is establishing a shipbuilding yard there. It is said that that city is guaranteeing the company's bonds for $100,000, taking a mortgage on the plant, and that the bonds will be underwritten by the Credit Canadien, Inc., Montreal. The company is said to have a contract from the Imperial Munitions Board for hulls for two wooden ships, and is also said to be likely to receive further contracts. T. M. Kirkwood, Toronto, is President; J. E. Kirkwood, Treasurer, and T. M. Donnelly, Manager.

Western Canada Shipyards, Ltd., Vancouver, which has an order for six wooden steamships for the Imperial Munitions Board, have completed erecting the frames for the first hull, those for the second and third being well advanced. Night and day shifts are being worked.

The William Lyall Shipbuilding Co., is reported to be making good progress with the construction of the 10 wooden steamships on order for the Imperial Munitions Board. The framing of the first vessel was placed early in September, and the framing of the second was erected during the month. Keels for the second pair were expected to be laid before the end of the month, and considerable of the framing placed.

General Shipbuilding Notes.

The Annapolis Shipbuilding Co. launched a tern schooner at Annapolis Royal, N.S., Sept. 1, for Montreal parties. The dimensions are: Length, 145 ft.; beam, 35 ft.; depth, 12.9 ft.; tonnage, 500 gross, 430 register. The company has two other schooners under way.

British Columbia Shipbuilding. — A Vancouver press dispatch, Sept. 15.— British Columbia's shipbuilding programme provides for the construction of some 17,000 gross tons of commercial shipping, to have a total carrying capacity of nearly 185,000 tons. The value of these ships, about 50 in all, is in the neighborhood of $25,000,000.

H. Elderkin & Co. are reported to have launched the schooner Adam B. Mackay, of 370 tons register, at Port Greville, N.S., Sept. 3, for the A. B. Mackay Steamship Co., Hamilton, Ont.

Foley Bros., Halifax, N.S., have purchased North's shipyard at Hantsport, N.S., and are reorganizing and enlarging the plant. Two vessels are reported to be under construction there.

The **Gardner Co.** have built an auxiliary schooner, named Bianca, at Liverpool, N.S., for Bowring Bros., St. John's, Nfld. She is 129 ft. long, 33 ft. beam, and 408 gross tons ,and is equipped with a 100 h.p. crude oil burning engine, for a speed of about 6 knots an hour.

Government Shipbuilding in Maritime Provinces.—Sir James Lougheed stated in the Senate, Sept. 5, that the government had under consideration the building of ships in Prince Edward Island, Nova Scotia and New Brunswick, for commercial use or government purposes, but that no contracts had been concluded.

The International Shiubuilding Co., which purchased property recently at Rosebank, N.B., on the bank of the Miramichi River, for the esttablishment of a wooden shipbuilding plant, is pushing matters ahead, and is reported to be receiving stocks of vessel timbers for early construction.

Leander Graham is building a schooner, Khaki Lad, of about 325 tons, at Port Greville, N.S., for J. W. Kirkpatrick and others. She will be launched early in October, and is reported to have been sold to Newfoundland parties.

J. Lewis & Son, East River, Sheet Harbor, N.S., launched a four masted schooner, 215 ft. long over all, 680 tons register, Sept. 1. She is fully equipped with steam winches, and is intended for southern trade. The company has a larger schooner under way.

The Midland Shipbuilding Co. Ltd., has been incorporated under the Dominion Companies Act, with $1,000,000 capital and office at Midland, Ont., to carry on the business of shipbuilders in all its branches. It is said that it will take over the Midland Dry Dock Co., Ltd.

Port Arthur Shipbuilding Co.—The steam trawlers under construction at the company's yards at Port Atrhur, Ont., are progressing rapidly. The second one was launched Sept. 10, and it was anticipated that two more would be launched by Sept. 30 and another two early in October, and then at the rate of about one a week for the balance of the order.

Wallace Shipyards, Ltd., is reported to have leased a site on Granville Island, in False Creek, from the Vancouver Harbor Commissioners, for the construction of a foundry for the supply of castings for its own and other shipbuilding plants.

Wallace Shipyards, Ltd., expected to launch the last of the auxiliary powered schooners built for Canada West Coast Navigation Co., about the end of September. She is to be named Marie Barnard. She was built at the no. 2 yards, which have been sold to Wm. Lyall Shipbuilding Co., and as soon as she is launched she is to be moved to the no. 1 yards for completion.

British Shipbuilding in United States.—A press dispatch says that the s.s. War Banner, which is being built for British registry, was launched at Chicago, Sept. 16, by the Chicago Shipbiulding Co., for the Cunard Line, the approximate cost being $800,000.

Lake Vessels for Overseas Service.

A Kingston, Ont., press dispatch of Sept. 13, stated that the Canada Steamship Lines had sold six steamships, viz., H. M. Pellatt, J. H. Plummer, Beaverton, A. E. Ames, Mapleton and Saskatoon, to the British and Canadian Governments jointly, to replace losses caused by the German submarine campaign. The vessels mentioned are not owned by Canada Steamship Lines, but by Canadian Northern Steamships, Ltd., as stated in Canadian Railway and Marine World for June. They are operated, for the owners, by Canada Steamship Lines, as the Merchants Mutual Lake Line. We are officially advised that they have not been sold, and while no further information in regard to them is available, there appears to be little doubt that at least four of them, viz., A. E. Ames, Beaverton, H. M. Pellatt, and J. H. Plummer, have been chartered for overseas service for the ensuing winter, if not for the duration of the war. The H. M. Pellatt went into dry dock at Kingston early in September to be overhauled and re-painted, and have some slight changes made to fit her for ocean service and the other three will probably be drydocked at early dates. The Mapleton and the Saskatoon have been in the coal trade this year, running between Sydney, N.S., and St. John, N.B., and between Sydney and Montreal, most of the time. The Mapleton was brought west a little while ago, to carry coal between Lake Erie ports and Montreal.

Reciprocal Coasting Arrangement with the United States on the Great Lakes.—Some little misunderstanding seems to exist as to the arrangements made between Canada and the U. S. as to the coasting laws appertaining to the Great Lakes. So far as Canada is concerned, thhe coasting laws have been changed to permit U. S. vessels to engage in the Canadian coasting trade of Canada on the inland waters between Lake Superior ports and Montreal without penalties for the balance of the season, the change to remain in force so long as similar privileges are in effect granted to Canadian vessels by the U.S. The U.S. regulations were settled by an act of Congress, and the administration there has not the authority to abrogate or suspend such regulations, as the Dominion cabinet has. Accordingly, pending action by Congress, the administration acted, not by suspending the regulations or the law, but by suspending the penalties, and Canadian vessels are therefore free to engage in the trade on this basis, and inspectors and collectors, acting on instructions from Washington, are not interfering.

The Henderson Transfer and Lighterage Co., Ltd., has been incorporated under the Ontario Companies Act, with $100,000 authorized capital and office at Fort Willian, to carry on a general lightering, towing and wrecking business, and in connection therewith to own and operate steam and other vessels, and to engage in foreign and domestic commerce by water. R. J. Henderson and J. R. Smith, grain merchants, Fort William, are chiefly interested.

Lumbergrass Shipbuilding Co., Ltd.— At an extraordinary general meeting, at St. John's, Nfld., Aug. 27, it was resolved that it having been proved to the shareholders' satisfaction that the company cannot, by reason of its liabilities, continue business, it is advisable to wind up the company voluntarily. P. J. Shea, St. John's, Nfld., was appointed liquidator.

Changed Subsidies for Dry Docks.

The following act was passed by the House of Commons Sept. 17.

1. This Act may be cited as The Dry Docks Amendment Act, 1917.

2. Paragraph 1 of section 7 of The Dry Docks Subsidies Act, 1910, as enacted by chapter 20 of the statutes of 1912, is repealed and the following is substituted therefor:—

"(1) Dry docks of the first class for naval and general purposes costing, for the purposes of the subsidy calculation, not more than $5,000,000 in the case of dry docks specified in sub-paragraph (a), and not more than $4,000,000 in the case of dry docks specified in sub-paragraph (b) hereunder, being—

"—(a) dry docks, other than floating dry docks, of dimensions when completed of not less than the principal dimensions next hereinafter mentioned, that is to say, clear length on bottom from caisson groove or hollowquoin to head, 1,150 ft., clear width of entrance 125 ft., depth of water over sill at high water ordinary spring tides, 38 ft; and

"(b) floating dry docks of a lifting capacity of at least 25,000 tons, in which vessels can with ease and safety be received and repaired:

Provided, however, that any such dry dock shall not, for the purposes of this act, be deemed to be a dry dock of the first class unless there can be received and repaired therein with ease and safety the largest ships or vessels of the British Navy existing at the time at which the contract is entered into."

3. Paragraph (a) of subsection 1 of section 8 of the said act (as enacted by chapter 29 of the statutes of 1914, is repealed and the following is substituted therefor:—

"(a) if of the first class, a sum not exceeding 4½% per annum of the cost of the work as fixed and determined under subsection 2 of this section, half yearly during a period not exceeding 35 years from the time the Governor in Council has determined under this act that the work has been completed.

No bonds, debentures, or other securities shall be issued with respect to and as a charge upon any dock until it has been established to the satisfaction of the Minister that not less than $1,000,000 have been spent on the work and the material upon or for such dock, and that there are no outstanding and unsettled liens, encumbrances or claims upon or in respect of such dock, but thereafter the Minister may permit the issue of bonds, debentures, or other securities, and any subsidy mentioned by this section may, with the approval of the Minister, be assigned to a trustee for the holder of such bonds, debentures, or other securities, and the subsidy shall, in that event, be payable directly to such trustee, bnt, until the dock has been completed to the satisfaction of the Minister, the total amount of the bonds, debentures, or other securities issued shall not at any time exceed 75% of the amount actually expended for the work and the materials upon or for the dock and in no case shall any bonds, debentures, or other securities, be issued without the consent in writing of the Minister.

Provided, however, that half yearly payments on account of the subsidy at the rate of 4½% per annum on 75% of the cost of all work done and material provided at the time of such payment may be made during the construction of the said dock and for such period as may be determined by the Governor in Council, not exceeding 35 years from (and including) the first payment thereof, the amount of such cost to be determined by the Chief Engineer of the Department of Public Works, but no such payment on account shall be made until the work done and materials provided shall have cost the sum of at least $1,000,000. No such payments on account shall be made unless the said chief engineer reports that the work of construction of the dry dock with respect to which the payment is to be made has been done to his satisfaction, and no subsidy shall be paid except payments on account as aforesaid unless the Governor in Council, in the manner prescribed in section 10 of this act, has determined that the work required by the agreement is completed. The total subsidy, including such payments on account during construction shall not, however, in any case, exceed the amount of subsidy hereinbefore authorized."

4. The provisions of section 3 of this act shall not apply or extend to any agreement heretofore made for the construction of any dry dock.

5. The Dry Docks Amendment Act, 1912, chapter 20, of the statutes of 1912, and The Dry Docks Subsidies Act, 1914, chapter 29 of the statutes of 1914, are repealed.

Canadian Pacific Ocean Services and the War.

The services performed by the vessels owned by Canadian Pacific Ocean Services, Ltd., comprising those of the C.P.R. and Allan Lines, have been of inestimable value to Great Britain, and to the allied countries generally. The tonnage owned has, since the commencement of the war, increased by nearly 30%, and the company employs about 15,000 men. At the outbreak of war, the C.P.R. and Allan Lines had in service 35 vessels with a gross tonnage of 313,000 tons, and a large proportion of these was requisitioned by the Admiralty, including all the larger and newer vessels of both fleets. Two of the Allan Line vessels were commissioned as armed cruisers. and the four "Empresses" of the C.P.R. Pacific fleet were also fitted out as armed cruisers. A number of other vessels of both companies were taken for trooping service, or for transporting supplies and munitions, not only across the Atlantic, but over all waters from the far west to the far east. Notwithstanding this exceptional call on the companies' resources, they were able to carry on a regular passenger and freight business, maintaining an uninterrupted mail service and passenger and freight traffic westbound, as well as carrying eastbound large numbers of troops and stores and munitions of war. From the commencement of the war, the two companies transported 700,000 troops and passengers from and to Canada, the Mediterranean, India, China, Egypt. Gallipoli, Mesopotamia, across the English Channel. and the Pacific Ocean. During the same period the vessels steamed over 1,230,000 miles, and carried eastbound and westbound, over 3,000,000 tons of cargo, munitions, supplies, etc. The combined fleets, though suffering some slight diminution of tonnage by reason of war, have been gradually increased by purchase and building, so that today the number of vessels owned is 40, with a gross tonnage of 411,000 tons, while orders have been placed for four additional vessels of large tonnage. Services are being maintained in carrying mails for the different parts of the Dominions and the outer European ports of the allied countries.

Mainly About Marine People.

C. O. Weldon has been appointed Superintendent, International Transit Co., Sault Ste. Marie, Ont.. succeeding J. Summerhayes, resigned.

W. G. Ross, President, Montreal Harbor Commissioners, was re-elected President of the American Port Authorities at the recent annual meetings at Cleveland,

W. J. Vigars, Steamboat Inspector, Port Arthur, has been appointed Examiner of Masters and Mates, to examine candidates for temporary masters' certificates.

Capt. H. Oldenburg, master of the G.T.R. car ferry Lansdowne, operating on the Detroit River, died at Windsor, Ont., Sept. 4, aged 68. He had been in the service for 45 years.

Mrs. Stevenson, wife of the captain of the Canada Steamship Lines s.s. Rapids Prince, died at Cornwall, Ont., Sept. 21, from being run over by an automobile at Avonmore.

Capt. J. D. Warren, a pioneer sealing captain on the Pacific coast, and one time owner of the s.s. Beaver, said to be the first steamship plying along that coast, died at Victoria, B.C., Sept. 10, aged 80.

John W. Nutt, formerly Manager for British Columbia for the Allan Line Steamship Co., was presented with a purse of money and an address by a number of his transportation associates, at the Transportation Club, Vancouver, B.C., recently, on leaving for Winnipeg.

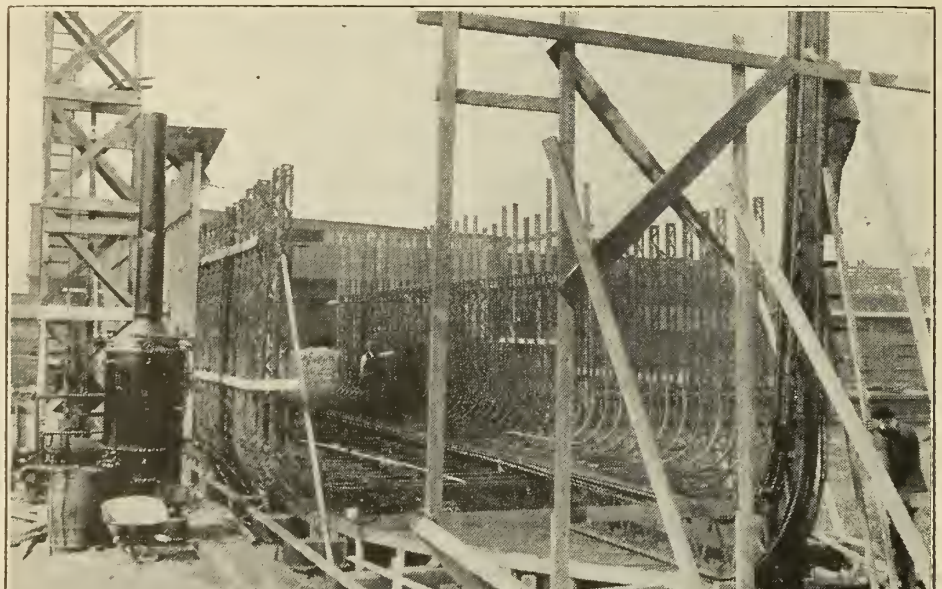
Jas. W. Crosby, who was in the Halifax Electric Tramway Co.'s service for some 19 years, his last position being General Manager and Purchasing Agent, and who, since the taking over of the company's business by the Nova Scotia Tramways & Power Co., has been in the latter company's service, is leaving it.

J. O. Cameron, of Cameron-Genoa Shipbuilders, Ltd., and the Cameron Lumber Co., Victoria, B.C., was elected a Vice President of the Association of Pacific Coast Port Authorities, at its annual meeting at Los Angeles, Cal., recently. It is probable that the association will meet in Victoria in 1918.

Alfred Erwin McMaster, who was appointed Secretary and Treasurer, Port Arthur Shipbuilding Co., Port Arthur, Ont., recently, was born at Perth, Ont., Oct. 22, 1885. He entered transportation service in 1902, since when he has been, to May, 1903, clerk in Freight Department, C.P.R., Keewatin, Ont.; May, 1903, to 1905, clerk, C.P.R., Port Arthur, Ont.; 1905 to Aug., 1907, chief clerk, C.P.R., Port Arthur, Ont.; Aug., 1907, to Aug., 1908, agent and chief clerk to Superintendent, Grand Trunk Pacific Ry., Fort William, Ont.; Aug., 1908, to July 15, 1913, agent and General Agent, G.T.R., G.T.P.R. and G.T.P. Coast Steamship Co., Prince Rupert, B.C.; July 15, 1913, to Sept. 30, 1916, Commercial Agent, G.T.P.R., Regina, Sask.; Sept. 30 to Dec. 21, 1916, Division Freight Agent, G.T.P.R., Edmonton, Alta.; on Dec. 21, 1916, he was appointed Assistant Secretary for British Columbia, Canadian Manufacturers' Association, with office at Vancouver.

Reinforced Concrete Vessel Building in Montreal.

The Atlas Concrete Shipbuilding Co. has been organized in Montreal, to build a self propelling, reinforced concrete vessel for demonstrating purposes. The shell of the hull will be: length, 125 ft.; width, 22 ft.; depth, 13 ft. The vessel will be of the single screw type, capable of making about 8 miles an hour, and will first be tried on the lakes, and will perhaps later be used for ocean service. In the accompanying illustration the concrete hoist is shown in place ready to pour concrete as soon as the formwork is completed. The structural steel ribs shown are 5 in. at the top, and 14 in. at the base and are set at 27 in. centre to centre. Before plans were prepared by C. M. Morssen, M.Can.Soc.C.E., and E. Brown, Professor of Applied Mechanics and Hydraulics at McGill University, tests were made on small ship beams to ascertain the resistance of concrete to the effects of hogging and sagging. The hull is expected to be ready for launching by Oct. 15.



Framework, Etc., for Concrete Vessel Building in Montreal.

The building of vessel hulls of concrete reinforced with steel, has, to a minor extent, been going on spasmodically since 1849, when a small vessel was built in France, and which is stated to be still in use. About 20 years ago a number of vessels were built of reinforced concrete in Italy, and in 1898 a schooner was built and operated for a few years in the North Atlantic trade. It is said that this vessel was injured after having been driven on the rocks near Cape Charles.

A few years later a concrete barge, 50 ft. long by 13 ft. wide and 3 ft. 4 ins. deep, was built in France, and operated for dredging purposes on the River Lozere, where it has been at work continuously ever since. Until quite recently this type of hull construction was confined solely to barges, lighters, etc., but latterly the construction of larger vessels has been undertaken, and propelling machinery has been added, but no actual details of the resulting operation of the vessels are available, although it is said that a completed vessel, with reinforced concrete hull, and equipped with propelling machinery, has been, or is very shortly being, placed in operation. The chief building of this type of vessel is taking place in Norway, where the hull of a 200 ton vessel was reported to have been launched Aug. 23. That hull was built bottom upward, and launched in that manner, eventually righting itself in the water. The frame used for the concrete is immediately available for another hull of similar size. Concrete barges, or lighters, have been in use also for several years, on the Manchester Ship Canal, Manchester, Eng., the Welland Canal, Ontario, and on the Chesapeake Bay, U.S., and the Panama Canal.

It is claimed that there is considerable advantage to be gained, by the use of concrete for barge construction and vessels of similar type, and that for machinery propelled vessels for ocean transportation, it is perfectly safe, and of equal, or superior advantage, but some doubts are expressed as to the possible disintegration of the mixture by the action of salt water, and as to the effects of a lack of resiliency in ocean service. After a rather serious collision between between the C.P.R. s.s. Empress of Britain, and the collier s.s. Helvetia, in the St. Lawrence, July 27, 1912, some rather extensive damage to the former vessel was repaired with concrete, and similar material was used for temporarily repairing the Canadian Northern Steamships s.s. Royal George, after she grounded at the Isle of Orleans, in the St. Lawrence, Nov. 5, 1912. Both vessels crossed the ocean under these repairs in perfect safety.

A British Columbia press report indicates that there is a possibility of concrete vessel construction being undertaken there in the near future, and it is announced that the Torcrete Shipbuilding Co. has been organized in Chicago, to build similar vessels for operation on the Great Lakes.

Lake Sailors' Wages.

Detroit. Mich., press dispatch, Sept. 12. —Following the custom of previous years the United States Lake Carriers Association has adopted a scale of wages effective Oct. 1, for men employed on its members' boats, which represents a substantial increase for each class of workers over scale now in effect. Increases represent an addition of from $5 to $13 a month to members of crews ranging from a little more than 4% to more than 21% over summer schedule for different classes of labor. The classes of workers benefitted, their present monthly rates of wages, and monthly rate effective Oct. 1 are as follows:—

Classification.	Present wages.	After Oct. 1.
Boatswain	$ 85.00	$ 95.00
Cooks, vessels over 4,000 tons	120.00	125.00
Cooks, vessels under 4,000 tons	105.00	110.00
Second cooks	60.00	65.00
Porters	47.50	57.50
Firemen, oilers, water tenders	72.00	85.00
Wheelsmen, lookout men	72.00	85.00
Ordinary seamen	47.50	57.50
Coal passers	45.00	50.00

While no fixed amount of increase in salaries of licensed officers is announced, the provisions of the wage card in effect last season with reference to bonus payments will again be operative. Under this plan all licensed officers who have served all season on a single vessel or in a single employ, and have laid their vessels up at the end of the season, will receive a full month's extra pay.

U. S. Lake Vessels for Ocean Service.— With reference to some information in our last issue as to the transfer of some 80 U.S. steamships from the Great Lakes to the Atlantic coast for winter service, it is now reported that the proposals may be abandoned owing to the alleged lack of docking facilities in the St. Lawrence. As most of the vessels which it was intended to transfer, would have to be cut in two to allow of their passage through the Welland Canal, arrangements would have to be made with Canadian yards on the St. Lawrence for refitting them, which, owing to the pressure under which these yards are working, is considered impossible. The U. S. Shipping Board is reported to be endeavoring to make arrangements with Canadian yards, and if this cannot be done, it is stated that only some 20 steam tugs will be taken to the coast.

S.S. Leebro's Work on Pacific Coast.— Sir Jas. Lougheed stated that the s.s. Leebro is owned by the Crescent Shipping Co., Ltd., Victoria, and is under charter to the Marine Department at $150 a day so long as the Department shall require her services. She has been chartered by the Department from time to time since June 3, 1908, the rate being $135 a day until Dec. 16, 1911, when the rate was reduced by $10 a day. From that date until Aug. 1, 1917, she was in service at $125 a day, since when, owing to the increased cost of coal, supplies and wages, the rate has been $150 a day. The rates referred to are for the vessel found in supplies of all kinds and cover wages of all necessary officers and crew for navigating the boat, also for fuel and provisions, and the owning company has to keep the vessel in repair.

Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co. has tried employing deaf and dumb girl operators in its Toronto offices, and has found it entirely successful. They are trained in the Deaf and Dumb Institute at Belleville, Ont.

The Great North Western Telegraph Co. has opened offices at Holland Landing, Ont., and Dodds, Alta., and has closed its offices at Lake St. Joseph Hotel, Little Metis Beach, Manoir Richelieu, Pointe au Pic and Restigouche, Que.; Royal Muskoka Hotel, Ont., and East Selkirk, Scanterbury and Victoria Beach, Man.

A general strike of Great North Western Telegraph Co.'s operators was declared, Sept. 24. Matters between the company and its operators had been unsettled for some time, and the two parties not being able to agree, the questions of wages and general conditions were submitted to a conciliation board under the Industrial Disputes Investigation Act. F H. Markey, K.C., Montreal, represented the company, and David Campbell the employes, and Judge Gunn, of Ottawa, was appointed Chairman by the Minister of Labor. The board made a report to the Labor Department, signed by the Chairman and the employes' representative, F. H. Markey, for the company, dissenting. The company declined to accept the award. The employes held a meeting at Toronto, Sept. 23, and it was announced that a secret ballot had been taken over the system in favor of a strike, no vote being recorded against it. In his letter to the Labor Department, giving his decision not to accept the board's award, G. D. Perry, General Manager of the company, took particular exception to the recommendation of an increase of at least $5 a month, since Apr. 1, in all offices except those at Montreal, Toronto, Winnipeg and Saskatoon, for which graduated rates of increases are recommended. He also objected to the proposed increase of $79.80 a month for the linemen east of North Bay. He claims that men living in small towns and villages should not receive as high a wage as those in the larger cities. He also points out that the proposed increases would mean the addition of about $100,000 a year to the company's expenses, and that the average annual profit for the past ten years did not reach that amount. At the time of writing, Sept. 25, it is not definitely known as to the number of employes affected, but we are advised that messages are still being received and dispatched at Toronto, and that a number of operators are still at work at numerous points.

Among the Express Companies.

Express Agent (in a prohibition town, at telephone)—Say, Doc, better send down for this case of books—they're leaking.—Judge.

T. Godmundson, agent, Dominion Ex. Co., Swift Current, Sask., was taken back theer from Ocean Falls, B.C., Sept. 15, charged with the theft of $250 from the company.

The Dominion Ex. Co. has taken possession of its new premises at Regina, Sask. The building is of stone, 60 x 125 ft. with loading platform 100 ft. long.

H. Heffernan, acting City Passenger Agent, C.P.R., Guelph, Ont., has been appointed acting agent, Dominion Ex. Co., there, in place of his late father, Jos. Heffernan.

The Canadian Northern Ex. Co., is stated to be taking over the office and space which were occupied by the Dominion Ex. Co. at Regina, Sask., prior to the latter moving to its recently completed new building.

Safeguarding Canadian Shipbuilding. —An order in council has been passed providing that it shall not be lawful, after Sept. 1, 1917, for any person, being the owner of a ship, or employed as a ship's agent, broker, husband, inspector or surveyor of ship machinery, or of ships, if he is not a natural born British subject, or if his father is, or was at any time the subject of a state at war with His Majesty, to enter or be upon any shipbuilding yard without the permission of the Minister of Marine, and it shall be the duty of the occupier of such yard to take such steps as may be practicable to prevent the admission to his yard of any such person save upon the production of the necessary permission. If any such person enters any yard without such permission, or if the occupier fails to take such steps as aforesaid, or if any officer, servant or agent of the occupier fails to comply with the directions of the occupier for the prevention of admission of such persons, he shall be guilty of an offence, and liable under summary conviction to a fine not exceeding $500 or to imprisonment for not exceeding six months. For the purposes of the regulation, the term "shipbuilding yard" means any premises in which any seagoing ships, boats or vessels, are made, equipped, finished or repaired.

The Toronto Coal & Dock Co., Ltd., has been incorporated by Canada Steamship Lines, Ltd., to haindle a general coal business at Toronto. A new dock has been equipped at Ashbridge's Bay with two McMylar type coaling machines and a Brown hoist machine, at a cost of about $35,000. It is the company's intention to put in 40,000 tons of coal immediately, and it is likely that two steamships will be operated in the coal trade from a U.S. Lake Ontario port, provided coal can be secured there. The harbor entrance can easily be kept clear of ice by the use of a good icebreaking tug, and it is understood the Toronto City Council is agreeable to arranging this.

The Collingwood Steamship Co., Ltd., has been incorporated under the Ontario Companies Act, with $40,000 authorized capital and office at Collingwood, to build own and operate steam and other vessels, and to engage in trading, sailing and maritime adventure, and to carry passengers and freight within the maritime regulations of the Dominion. The provisional directors are, G. C. Coles, M. P. Byrnes, F. G. Moles, H. R. Storey, and J. F. Zimmerman, all of Collingwood. The company has been operating during the past summer, and owns the s.s. City of Meaford, which was run between Collingwood and Sault Ste. Marie.

The s.s. W. H. Dwyer, which was reported to have been sunk by a mine or torpedo, about Aug. 26, was owned by Forwarders Ltd., Kingston, Ont., and was under charter for service between England and France. She was built for the Great Lakes trade, at Sunderland, Eng., in 1913, and was equipped with triple expansion engines with cylinders 17, 28½ and 46 ins. diam. by 33 ins. stroke, 850 i.h.p. at 95 r.p.m., and supplied with steam by 2 Scotch boilers 12 by 11 ft. at 185 lbs. Her dimensions were, length 250 ft., breadth 42¾ ft., depth 18 ft. 7 ins.; tonnage, 1,770 gross, 1,142 register.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Taylor & Arnold, Limited, Montreal, agents for Chadburn's (Ship) Telegraph Co., Ltd., Bootle, Eng., report that they are manufacturing ships telegraphs at their Montreal factory, at the rate of 10 a week, and will increase the capacity shortly to 15 a week.

The s.s. Empress of Ireland Case.—It is announced that the C.P.R. has entered an appeal to the Supreme Court against the judgment of the Admiralty Court, respecting the allocation of the amount realized by the sale of the s.s. Storstad, which was responsible for the sinking of the C.P.R. s.s. Empress of Ireland in the St. Lawrence, May 29, 1914. The Admiralty Court decided that the maritime laws of Great Britain govern the case, and thus, claimants for loss of life have priority of those claiming for material loss. The amounts claimed for loss of life amount to over $3,000,000, and the total amount available for distribution is $175,000. The C.P.R. claims that the Canadian laws should regulate the distribution of the amount, which provides for a pro rata division amongst all claimants. The C.P.R. claim is for $2,000,000. The case will probably be taken up about May, 1918.

German Vessels' Names Changed.—The United States Government has changed the names of seized German vessels as follows: Vaterland to Leviathan; Kronprinzessin Cecile to Mount Vernon; Kaiser Wilhelm II. to Agamemnon; Amerika to America; Hamburg to Powhatan; Grosser Kurfurst to Aeolus; Koenig Wilhelm II. to Madawaska; Neckar to Antigone; Rhein to Susquehanna; Princess Irene to Pocahontas; Friedrich der Grosse to Huron; Barbarossa to Mercury. The George Washington, President Grant and President Lincoln will not be renamed. The names of the tugs Huron, Pocahontas, and Powhatan, are changed to Allegheny, Chemung, and Cayuga, respectively.

The Algoma Exploration and Development Co. has been incorporated under the Ontario Companies Act, with power among other things to lay tramways on any of its property, and to build piers and wharves. The office is at Sault Ste. Marie, Ont. The authorized caiptal is $40,000, and the provisional directors are W. Goodwin, J. L. O'Flynn, W. H. Hussey, Miss B. C. Stuart, and Miss L. Browne, Sault Ste. Marie.

Steel Rails Export Prohibited. — The Dominion Government, under the War Measures Act, has prohibited the exportation of steel rails to all destinations abroad, other than the United Kingdom, British possessions and protectorates.

It is stated that plans and specifications are practically completed for the addition to the Courtenay Bay breakwater in St. John, N.B., harbor, that tenders will be called for shortly and that the extension will be about 4,000 ft. long, toward the Negrotown breakwater. The extension to the Partridge Island wharf is being carried out by the Dominion Public Works Department.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.
Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.
Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.
Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.
Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each
Dominion Marine Association—F. King, Counsel, Kingston, Ont.
Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.
month, 8.30 p.m., except June, July and August.
Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.
Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.
Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.
Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.
Express Traffic Association of Canada—C. N. Ham, Montreal.
Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.
Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.
International Water Lines Passenger Association—M. R. Nelson, New York.
Niagara Frontier Summer Rate Committee—James Morrison, Montreal.
Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.
Quebec Transportation Club—A. F. Dion, Quebec.
Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.
Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.
Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.
Transportation Club of Vancouver—H. W. Schofield, 553 Church Street, Vancouver, B.C.
Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.
Western Canada Railway Club—Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.
Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

Proposed International Shipping Committee.—A Washington, D.C., dispatch of July 19, stated that Great Britain has volunteered to surrender a large part of her revenue from ocean freight rates if the U.S. will join in the establishment of an international shipping committee, for the control of ocean freight rates, as well as all vessels and cargoes. It is proposed that all neutral shippers would be pooled, in the sense that they would not be able to obtain U.S. products unless they turned over their vessels for use between the U.S. and its allies. Great Britain has not, up to the present, attempted to control freight rates, leaving the matter entirely in the hands of the vessel owning companies, the government taxing the surplus over a certain amount for war purposes. In volunteering its services in this connection, the British Government will forego considerable revenue from the taxation of excess profits.

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These Jacks are built for heavy service in bridge, roundhouse and wrecking work, are made with great care from the very best material and will be found the most satisfactory jacks for the purpose on the market.

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STEEL CASTINGS
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For Crusher Jaws and Heavy Wear Parts

BRONZE
M.C.B. Standard Journal Bearings and Engine Bearings

Improved Reinforced Steel-Backed
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Locomotive Driver and Truck Shoes. Freight and Passenger Car and Electric Car Shoes.

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Sole Agents for Brakeshoes for Canada outside of B.C., Messrs. Taylor & Arnold, Limited. Montreal and Winnipeg. Sole Agents for B.C., The B.C. Equipment Co., Vancouver, B.C. Sole Agent for Lifting Jacks for Canada, F. H. Hopkins & Co., Montreal.

Our Guest

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For one person, $2 to $5
For two persons, $3 to $6
With twin beds, $4 to $6
Suites at various prices.

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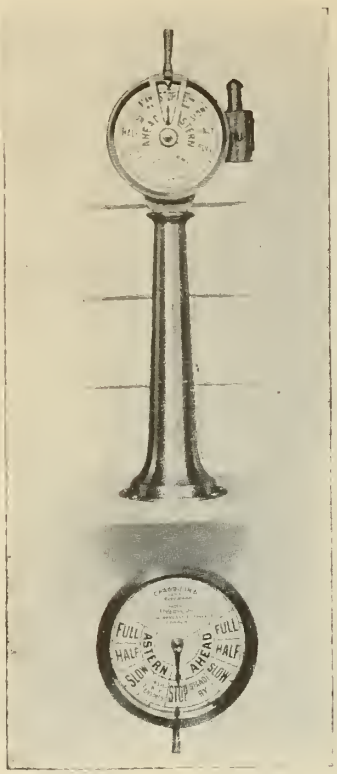

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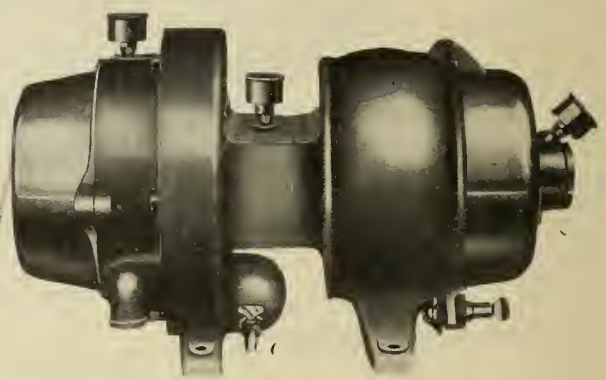

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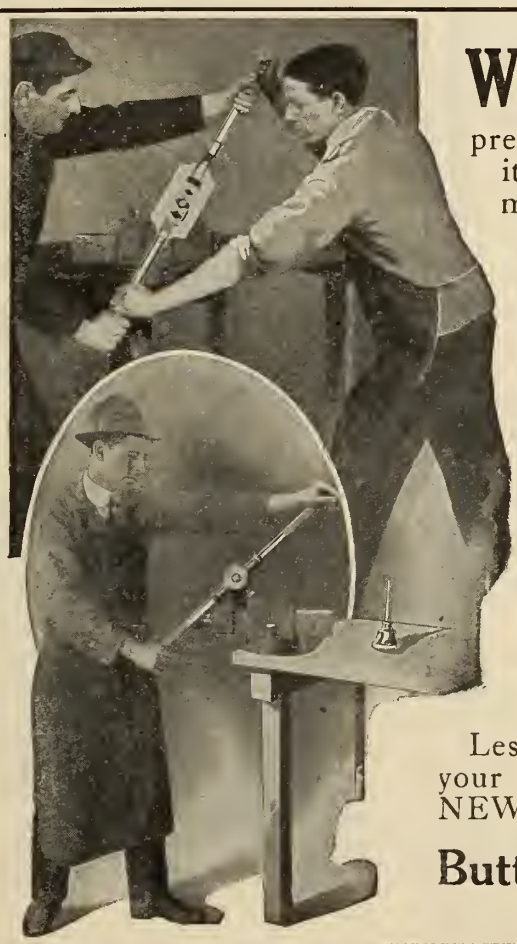

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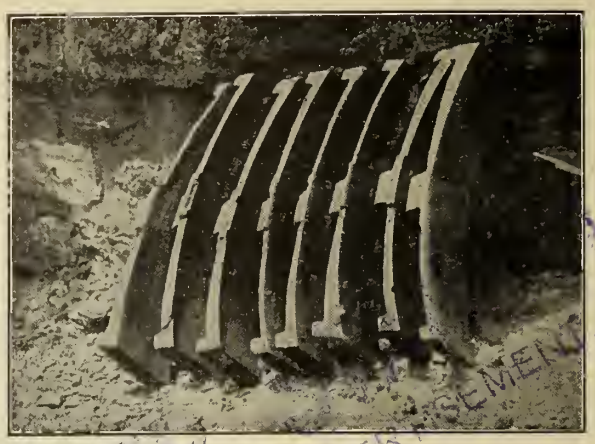

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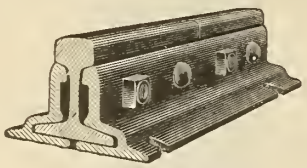
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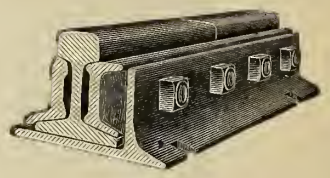
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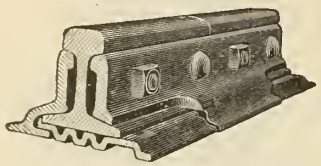
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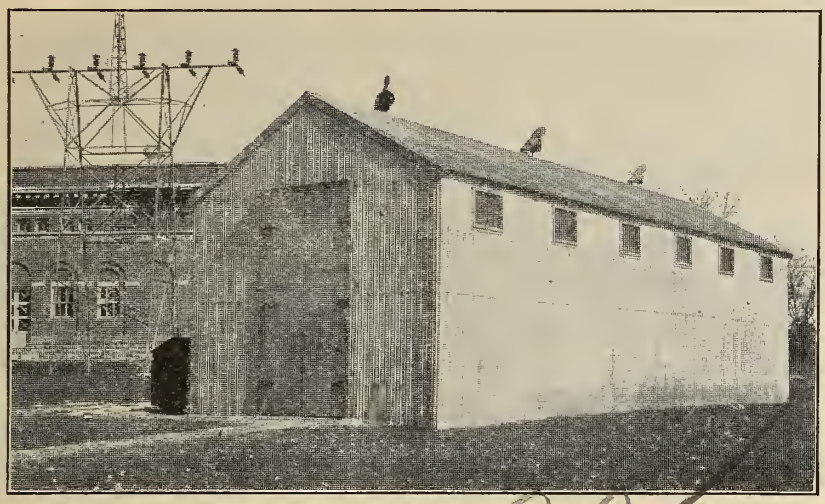

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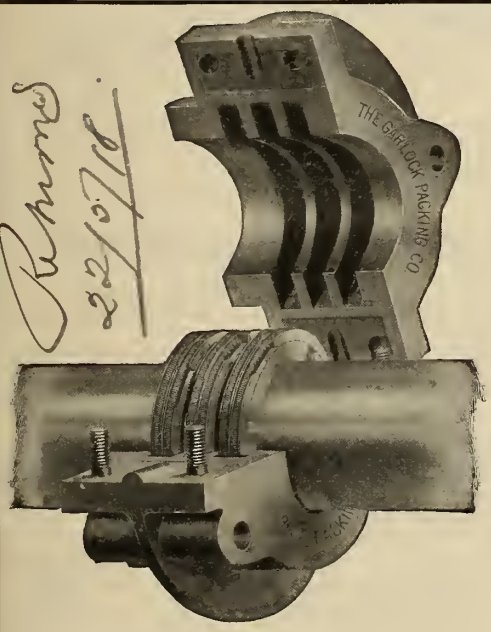

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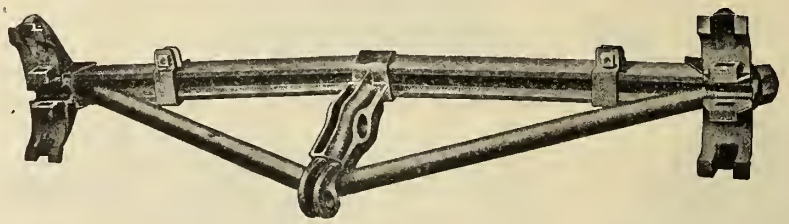

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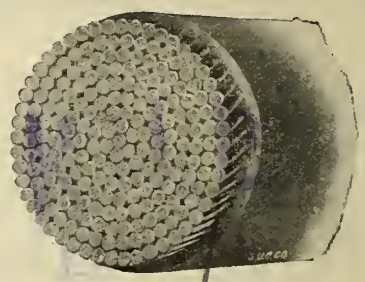

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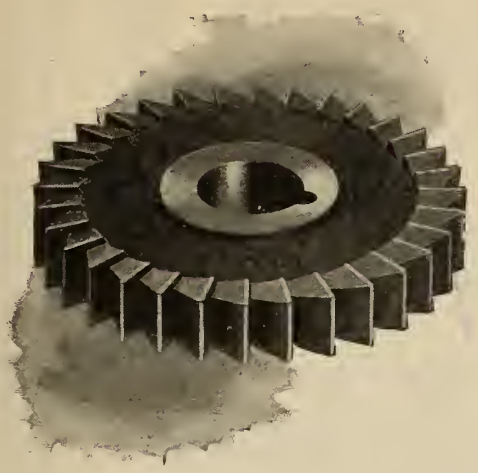

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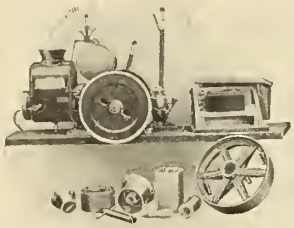

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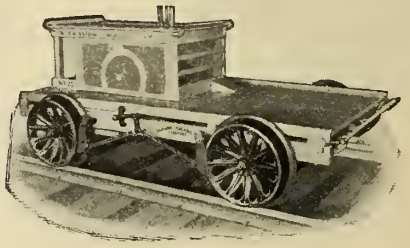

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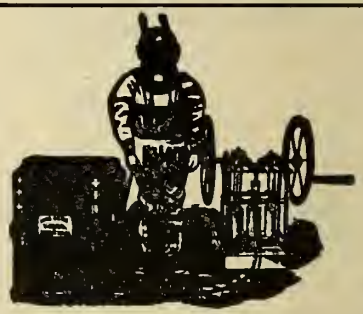

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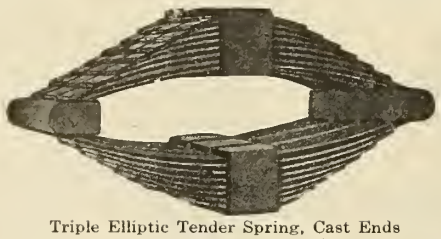

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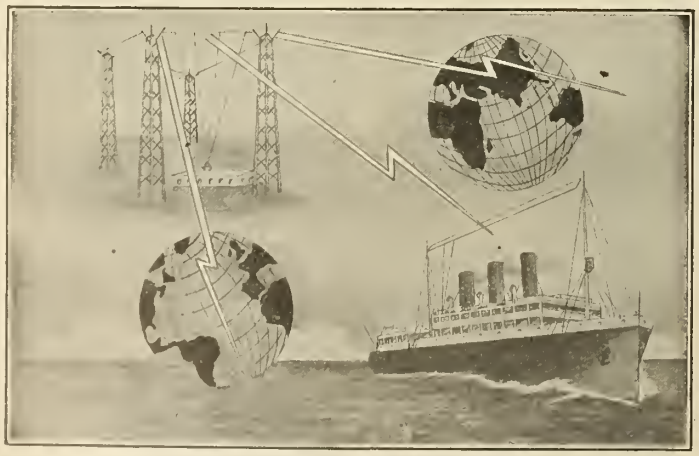

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Lagonda Cleaner Removing Scale from Arch Tubes.

Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of Locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L. Send for Copy.

Babcock and Wilcox, Limited

Head Office for Canada
St. Henry, MONTREAL

Toronto Office
Traders BankBuilding

General Railway Signal Company
of Canada Limited

Railway Operating Engineers, Manufacturers and Contractors
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling
Electric Interlocking

Electric Interlocking

Mechanical Interlocking

Highway Crossing Gates

Highway Crossing Bells

A-P-B. Automatic Block Signals for Single Track

A-C. and D-C. Automatic Block Signals for Double Track

Advantages of Absolute-Permissive Block Signaling (A-P-B)

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signaling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.

Head Office and Works
LACHINE, QUEBEC

COTTER PINS

SPRING COTTERS

made of bright steel spring wire,
half wound

Wire, Copper or Galvanized
Bolts, Nuts, Rivets, Washers
Screws, Pole Steps, Guy
Clamps, Cross Arm Braces
Forgings, Track Equipment

THE
STEEL COMPANY
OF
CANADA
LIMITED

HAMILTON - - MONTREAL

marked

Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 237 TORONTO, CANADA, NOVEMBER, 1917 Subscription Rates, Page 437

Railway Springs

LOCOMOTIVE DRIVING SPRINGS and Railroad Springs of all kind, with a Canadian guarantee.

We have been manufacturing Springs for almost fifty years and the experience we have gained is at your disposal in designing and manufacturing your Spring requirements.

Write for order forms to,

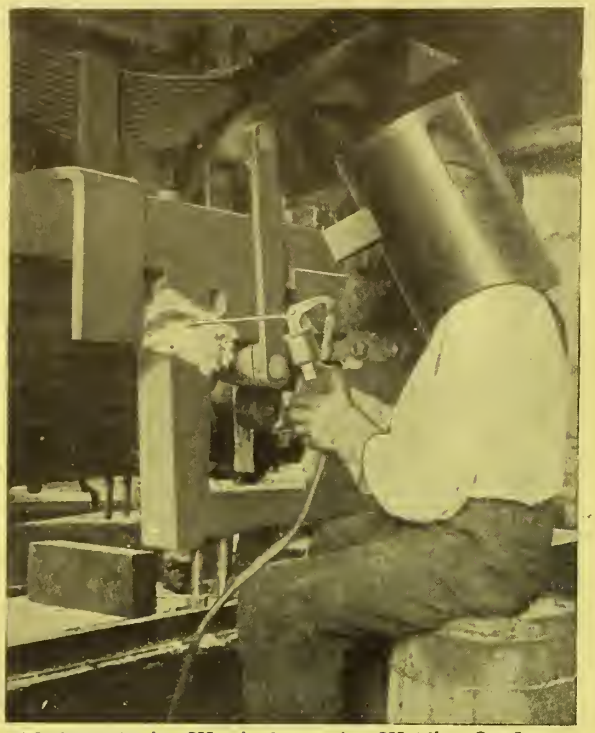
B. J. COGHLIN COMPANY, LIMITED

Office and Works:

Ontario Street East Darling and Davidson

MONTREAL

Index to Advertisers, Page 86 Purchasing Agents' Guide, Page 83



Method of using Westinghouse Arc Welding Outfits.

Westinghouse
Arc Welding Outfits

The value of the Westinghouse Arc Welding Outfit as a money saver has multiplied during the past two years owing to the abnormal increase in the cost of materials and supplies used in the maintenance of equipment.

Westinghouse Arc Welding Outfits are used in every industry in which steel plays a part.—They are perhaps most extensively used in steam and electric railroad repair shops, where the wide variety of useful operations has made these outfits indispensable.—It is the most economical method known, combining both speed and safety.

We shall be glad to have you investigate the Westinghouse Outfit, and learn what it is doing.—Our nearest office will give full information.

Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO, Traders Bank Bldg. MONTREAL, 52 Victoria Sq. OTTAWA, Ahearn & Soper, Ltd. HALIFAX, 105 Hollis St. FT.WILLIAM, Telfer Bldg.
WINNIPEG, 158 Portage Ave. E. CALGARY, Grain Exchange Bldg. VANCOUVER, Bank of Ottawa Bldg. EDMONTON, 211 McLeod Bdlg.

Perishable Products Properly Protected

The **MOORE SYSTEM** of Refrigeration, Heating and Ventilation provides the greatest measure of protection in **all** seasons.

The **MOORE SYSTEM** is economical—provides 20% more loading space, requires 20% less equipment, and 20% less operation and repairs.

The **Refrigerator** is dry and refrigerates all the load with one-third less ice.

The **Heater** protects all the load against frost in coldest weather. It constantly supplies fresh air and removes gases, fumes and odors. It keeps the load fresh and prevents wilt, shrivel, smoke, taint or freeze. It is operated from outside the car, is simple and requires no special attendant. It **can** be used in **any** refrigerator car, and **should** be used in **all** refrigerator cars.

It is the system that reduces damage claims to a minimum.

Refrigerator, Heater and Ventilator Car Co.
St. Paul, Minnesota

KILL
LAST AD

The Concrete Ship

We'll furnish the Mixers to mix it
and it's Dry Dock.

Fairbanks-Morse Machinery

is Built to Serve

WE CAN EQUIP YOUR SHOPS AND YOUR SHIPS

Pumps,	Hoists,	Conveyors,
Welding Apparatus,	Trucks,	Pulleys,
Air Compressors,	Boilers,	Wood Working Machinery,
Electric Motors,	Engines,	Machine Tools,
Jacks,	Flood Lights,	Steam Fittings.

Send for your copy of the F. M. Book,
our new 1,000 page general catalogue.

The Canadian Fairbanks-Morse Co., Limited

"Canada's Departmental House for Mechanical Goods"

St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Windsor,
Winnipeg, Saskatoon, Calgary, Vancouver, Victoria.

Give Your Men Good Locomotive Cranes to Use

It pays. Whether it is in storage yard, at shop, or out on the road, a good locomotive crane shows to a big advantage. The work is not delayed every now and then by frequent break-downs. Nor are your men subject to accident by overloading the crane. A good locomotive crane is well built and has a large overload capacity. The work is assured of being done quickly and satisfactorily.

The Brownhoist Locomotive Crane is a good crane. You can determine for yourself by investigating its construction from tip of boom to the standard M.C.B. trucks. And also inquire among your friends. Some of them use the Brownhoist. It may cost more—but is worth it.

The Brown Hoisting Machinery Co.
Cleveland, Ohio, U. S. A.

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller Cranes and Hoists.

Branch Offices in New York, Pittsburg; Chicago, San Francisco, and (Portland, Ore., Colby Eng'r Co.)

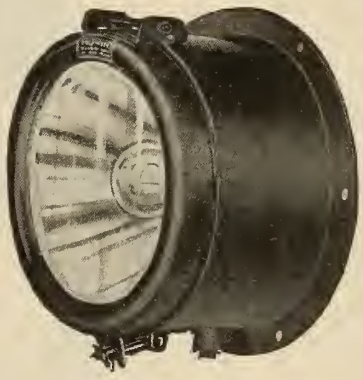
These Keystone Specialties—sure remedies for dark, dingy cars—use them

"Safety" Car Lighting Fixtures

Illuminate the interior of your cars with Safety Car Lighting Fixture units. They distribute the light properly, save money and offer greater attractiveness.

Use "GOLDEN GLOW" Headlights to light up a "path of safety" before your cars. They project powerful beams of soft, non-blinding and penetrating light 'way ahead.

Label your cars with Illuminated Car Destination Signs. They have many advantages. Well labeled cars make more money.



"Golden Glow" Headlights

Illuminated Car Signs

The San Francisco-Oakland Terminal Railways long ago realized the increased value of well lighted cars over dark, dingy cars. They use hundreds of each of these specialties.

Write for complete data.

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GENERAL RAILWAY SIGNAL COMPANY
OF CANADA LIMITED

Railway Operating Engineers, Manufacturers and Contractors
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling
Electric Interlocking

Electric Interlocking

Mechanical Interlocking

Highway Crossing Gates

Highway Crossing Bells

A-P-B. Automatic Block Signals for Single Track

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The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.

Head Office and Works
LACHINE, QUEBEC

Galvanized Telephone and Telegraph Wires
Galvanized Cross Arm Braces
Galvanized Guy Clamps

Send us specifications and we will quote

Pole Line Hardware

Our Pole Line Hardware stands the test of time and weather even in Canada's varying climate

Wires—Copper or Galvanized. **Bolts—Nuts—Rivets—Washers—Screws—Pole Steps—Guy Clamps—Cross Arm Braces**

KILL
LAST AD.

Sales Offices at
Hamilton, Montreal, Winnipeg, Vancouver, St. John.

THE
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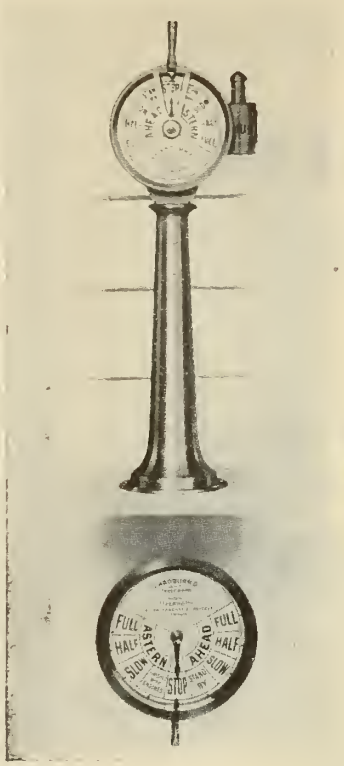
OF
CANADA
LIMITED

HAMILTON - - MONTREAL



Made in Canada

Patent "Duplex Gong" Telegraphs

Telegraphs for Engine, Twin Engine, Stokehold, Steering and Docking.

Engine Room Indicators (Speed)

Engine Counters

KILL LAST AD.

Chadburn's (Ship) Telegraph Co'y, Ltd.
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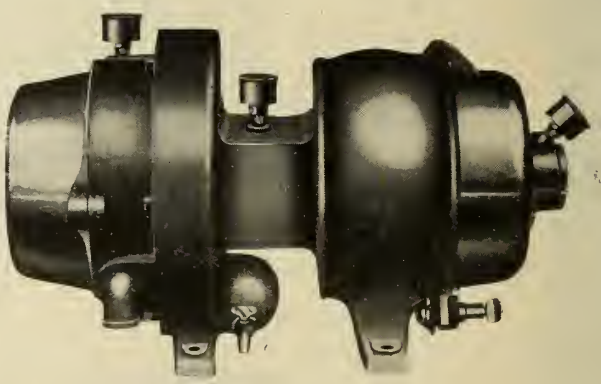
The "Taynold" Incandescent Electric Headlight



Made in Canada

KILL LAST AD.

An Incandescent Headlight that complies with every railroad requirement in every province of Canada. A headlight that has proved efficient and economical.

Taylor & Arnold, Limited

Manufacturers of Railway and Marine Specialties

Montreal **Winnipeg** **Vancouver**

"DOMINION" Wire Rope

Was used in preference to all other makes on

THE QUEBEC BRIDGE

Because of its STRENGH and DURABILITY

The Dominion Wire Rope Co., Limited

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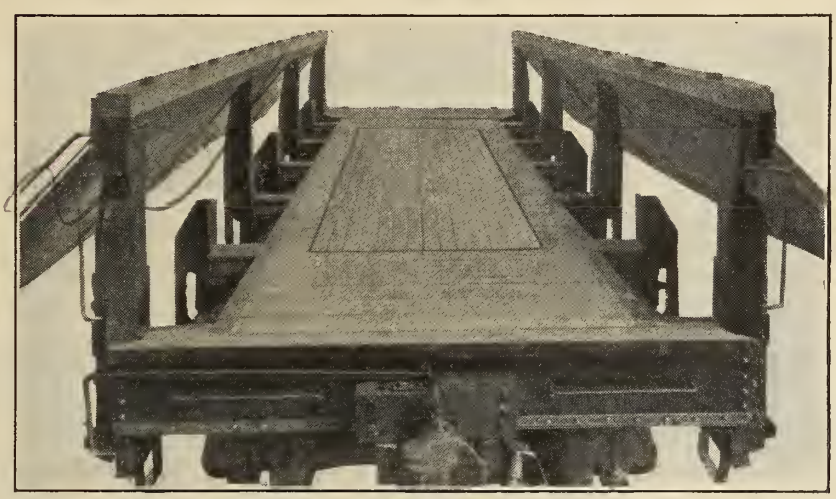
Side Ballasting With One Side Closed

The Latest in Ballast Cars

25 per cent More Door Opening Area.

Less Stakes to Obstruct the Dumping Material.

No Clogging of the Material or Boulders between the Plow and Stakes.



Dumps Clean and Quicker in any Material.

No more Breaking of Stakes or Cables.

The Car that will Give Maximum Service with Minimum Repairs.

Write for Booklet No. 19 for further information.

—DESIGNED, BUILT AND PATENTED IN CANADA—

The HART-OTIS CAR CO., Limited, MONTREAL

"INDUSTRIAL WORKS" CRANES

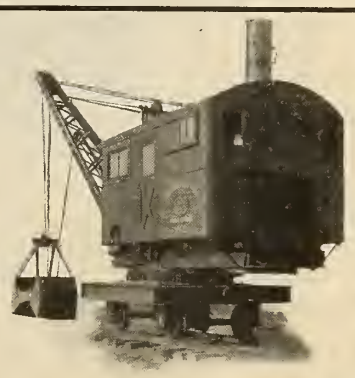
Were Used Exclusively in the Construction of

The Quebec Bridge

Because They Give Greater

SERVICE, SAFETY and SPEED

THAN ANY OTHER MAKE



Branch:
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Head Office:
MONTREAL

Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

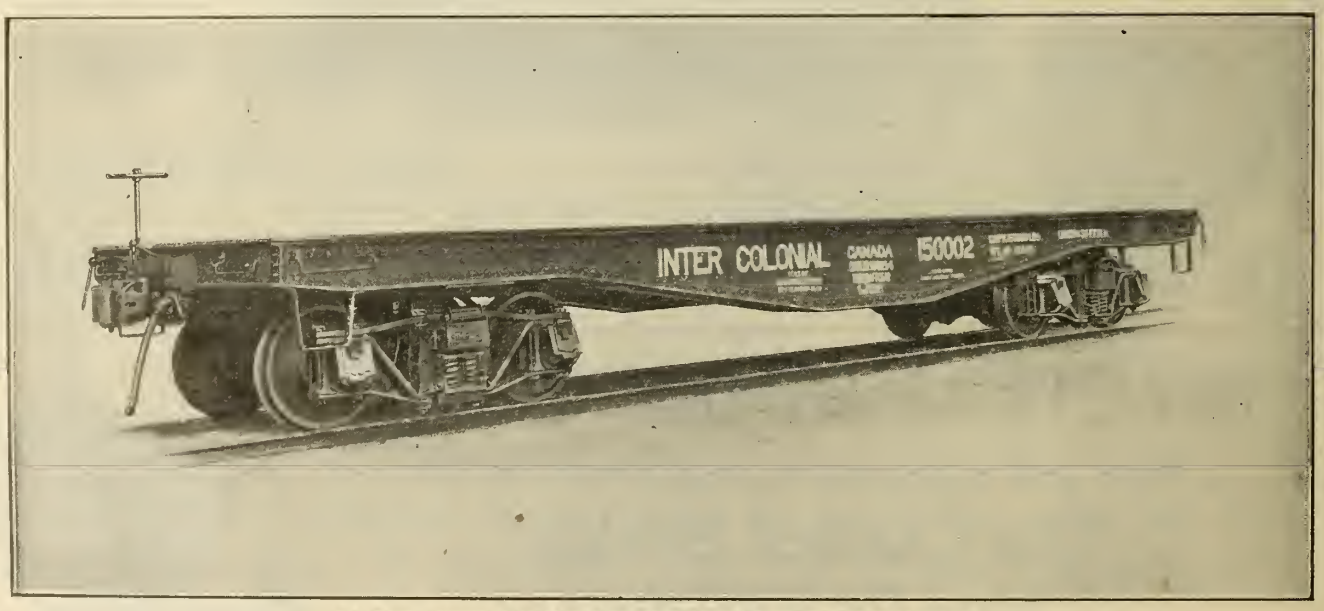
Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

For prices and particulars write to

Head Office - - New Glasgow, Nova Scotia

Western Sales Office, Room 14, Windsor Hotel, Montreal



75 Ton Special Pit Car For Canadian Government Railways.

FLAT CARS, CABOOSES AND MINE CARS

We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

Eastern Car Company, Limited

General Offices and Works, New Glasgow, N.S. **Montreal Office, Room 14 Windsor Hotel**

TROLLEY CATCHERS are intended primarily for city service, on high speed interurban roads O-B retrievers, not only stop the pole when it goes "wild" but also pulls it down below the span wires, should be used.

Simplicity, Efficiency and Strength in

KILL
LAST AD.

O-B Trolley Catcher

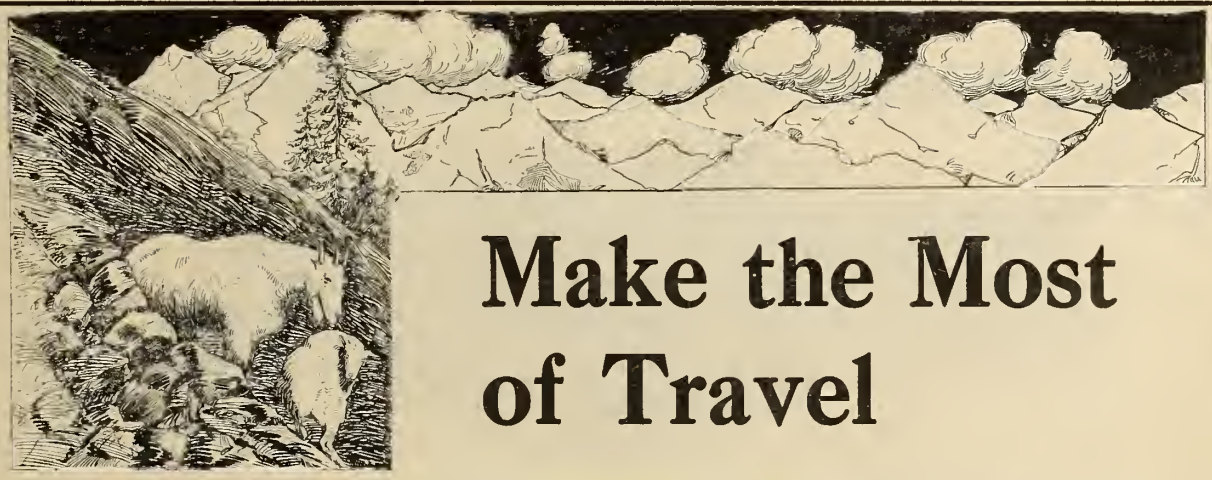
Simplicity and rugged construction combine in the improved O-B Catcher to make it give satisfactory service with only indifferent care. Its simplicity has been attained with no detriment to its efficiency—in fact it has made possible new and valuable features.

It will not permit the pole to "step up." Exclusive O-B construction renders this absolutely impossible. When the wheel leaves the trolley wire, the pole is caught and held securely.

Another feature is the reel latch, convenient at many times. It holds the reel with the spring wound so that the rope may be removed and replaced without removing the cover or stopping to wind up the spring. The latch is free from complication andcannot interfere with the satisfactory operation of the catcher.

Write for a complete description of the improved O-B Catcher.

THE OHIO BRASS CO., Mansfield, Ohio



Make the Most of Travel

THE passenger to the Pacific Coast is to-day offered a choice of routes that renders it unnecessary to re-trace his steps and opens up a wealth of new scenery and outdoor sport.

Do not fail to visit Jasper and Mount Robson Parks with their wonderful mountains, gorges, glaciers and cataracts.

Here the protection given to game has increased the quantity and reduced the fear of man.

Mountain sheep and goat, the most wary of animals, are seen feeding on the hills, and coming down to the railroad in view of passing trains.

For further particulars see our booklet "The Canadian Northern Rockies," or apply to General Passenger Department, Montreal, Quebec.; Toronto, Ont.; Winnipeg, Man.

CANADIAN NORTHERN RAILWAY

SCALE

The object of the many expensive devices that are applied to locomotives for the purpose of saving fuel is defeated by scale gradually building up on the heating surfaces of the boilers.

It has been proven by careful investigation that the loss of efficiency due to scale formation is much greater than is generally known. Incrustation ranging from 1-32nd to 1-16th of an inch thick causes a loss of from 7 to 15% in heat units.

Investigation will show that the cost of **Dearborn Treatment** necessary to prevent scale formation is a small percentage of the saving that it is possible to make by keeping the heating surfaces of the boilers clean.

Send gallon samples of the water supplies for analysis and further information.

Dearborn Chemical Company of Canada, Limited

1220-1230 Dundas Street, TORONTO, CANADA

Make Uncle Sam's Standard Your Standard

After Careful, Complete and Conclusive Tests Uncle Sam Has Officially Adopted Craftsman Quality No. 1

DU PONT FABRIKOID

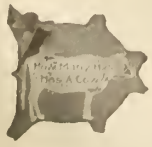
REG. U. S. PAT. OFF.

The U. S. Standard Ship Upholstery Material

The best upholstery material for ships is obviously the best for railroads—Uncle Sam's O. K. is a splendid guide for you.

Fabrikoid offers you the same economies it offers your government—it is good business to accept them.

Prices and Samples on Request. A Trial Order is convincing.

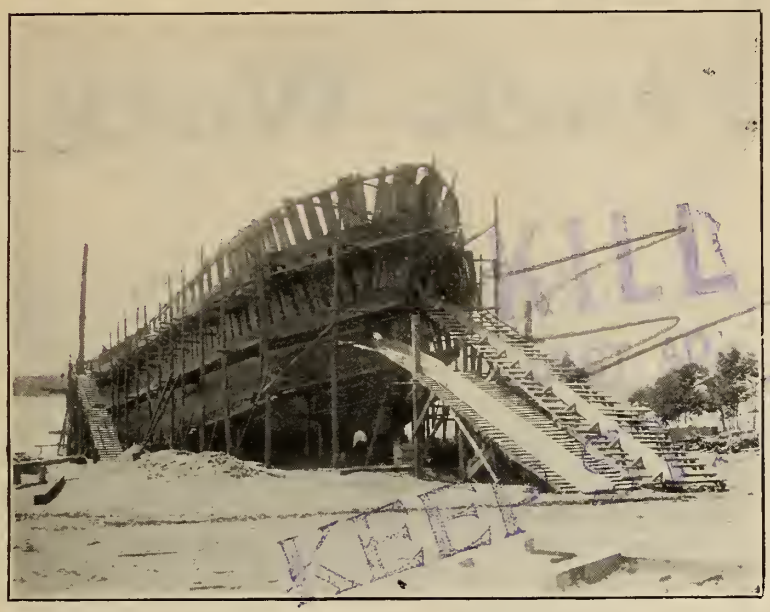


Du Pont Fabrikoid Company, Wilmington, Del.

WENDELL & MACDUFFIE CO.

Railroad Department Representatives: 61 Broadway, New York

What Wooden Shipbuilders Are Doing
With Our Pneumatic Tools



Wood Boring
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Horsing Oakum
Blowing Forges
Operating Air Hoists
Operating Heavy Wood Chisels
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Production is speeded up and costs are cut in every case. Let us submit figures from actual performance, and prices for the equipment.

Our nearest branch is at your service.

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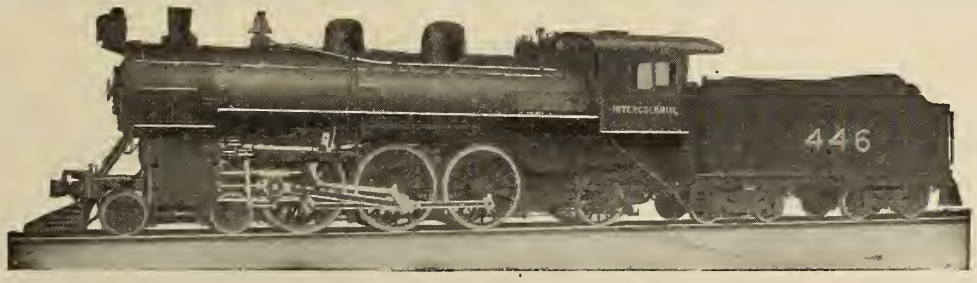
Head Office: 31 Commercial Union Bldg., MONTREAL, CANADA

BRANCHES: SYDNEY, TORONTO, COBALT, TIMMINS, WINNIPEG, NELSON, VANCOUVER

Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE – INTERCOLONIAL RAILWAY
Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

Montreal Locomotive Works, Limited
DOMINION EXPRESS BUILDING, MONTREAL, CANADA

MANGANESE
Special Track Work

FOR

STEAM and ELECTRIC
RAILWAYS

We invite your enquiries for 1918 requirements.

Canadian Steel Foundries, Limited

P.O. Box 1630 - MONTREAL

Port Arthur Shipbuilding Co., Limited

Port Arthur, Canada

Designers and Builders of

STEEL SHIPS — BOILERS — ENGINES, Etc.

EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK

Dry Dock — 700 ft. x 98 ft. x 16 ft.

PLANT AT PORT ARTHUR, CANADA

In Stock for Immediate Delivery

Several 1st Class, New

CLAM SHELLS
1½ and 2 yards.

4 HOISTING ENGINES
8¼ in. x 10 in.—with Boilers.

Head Office and Plant

Port Arthur, Ontario

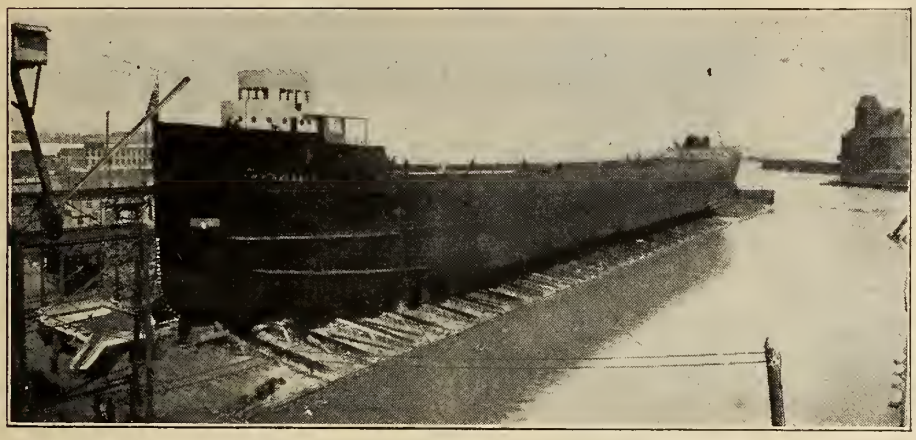
The Collingwood Shipbuilding Co.

Limited

COLLINGWOOD—ONTARIO—CANADA

Steel Ships, Engines, Boilers, Castings, and Forgings

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK



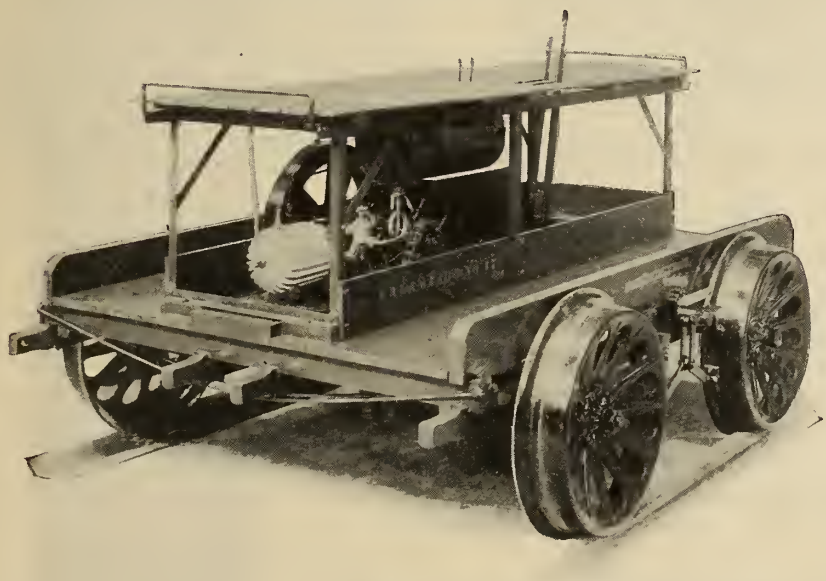
Steamer J. H. G. HAGARTY

Two Dry Docks
and
Shops

EQUIPPED TO OPERATE

Day or Night
on
Repairs

Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

Kalamazoo Railway Supply Company

KALAMAZOO, MICH., U.S.A.

Norton Jacks

For all Classes of Service

10 to 100 Tons Capacity

In Stock for Immediate Shipment.

Send for Illustrated Catalogue No. 29.

A. O. Norton, Limited

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Stock Carried by Canadian Agents: MUSSENS LIMITED
Montreal Toronto Winnipeg Cobalt Calgary Vancouver

50 YEARS IN THE BUSINESS

OVER 60,000,000 FILES A YEAR

The "Feel" of a Good File

Did you ever watch a really capable mechanic test a file? He has a way of passing a sensitive thumb over its teeth. Instinctively, unfailingly, he thereby determines whether it is fit for use.

This man always chooses "FAMOUS FIVE." He never buys blindly. He can "feel" that a "FAMOUS FIVE" is right. He can "feel" its sharp, keen cutting teeth, arranged in rows of perfect uniformity. There is no doubt in his mind. He buys "FAMOUS FIVE." He makes sure of satisfaction.

Our catalogue and copy of "File Filosophy" will interest you. Write for them to-day.

Kearney & Foot **Great Western**
American **Arcade** **Globe**

Made in Canada

The Nicholson File Company

PORT HOPE **ONTARIO**

Established 1834

Fotheringham's Patent Ventilating Port

This port is designed to provide ventilation when the main frame is closed during night time or in heavy weather, and is such that even in the event of temporary immersion, water cannot enter cabin.

OPEN

Ventilation can be regulated at will, or entirely shut off by watertight covers should it be desired.

Free access to all parts is obtained through the front inspection doors.

Send for illustrated circular.

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BRASS and IRON FOUNDERS
Wholesale and Retail Hardware, Marine Specialties, Etc.

Cable Address
"McAvity, St. John"
Codes, A.B.C. 4th and 5th Editions

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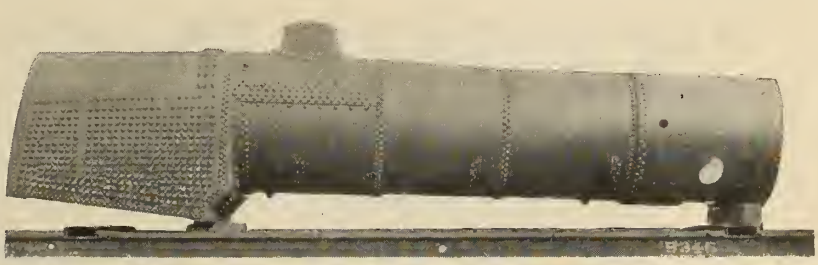
Branches at
Montreal, Toronto, Winnipeg



It is an Established Fact

That fireboxes of all types equipped with the Tate Flexible Staybolt show the lowest maintenance cost and highest earnings.

The Flexibility in the bolt serves to accomodate the relative expansion of plates under working operations of the fire box and boiler in a manner that has afforded less destruction to the sheets and seams than were found under conditions where fireboxes were rigidly stayed.

The Tate Flexible Staybolt is designed and made to give satisfactory results in the final measure of its usefullness as an economic, safe and reliable factor in reducing the costs of firebox repairs and maintainance.

In use on all the prominent railroad systems of Canada.

FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto Ont.

RESULTS COUNT

That's Why 480 Railroad Shops Are Using Thermit

Thermit offers the only sure and reliable repair for locomotive frames and other heavy sections.

The superheated liquid Thermit steel is produced in bulk and poured all at once into a mold surrounding a broken section, resulting in the perfect amalgamation of the Thermit steel with the parts with which it comes in contact. The fact that those parts are first preheated, makes the weld doubly sure.

The operation of welding locomotive frames is easily accomplished, without removing the frame from position, and with very little dismantling, no matter if the frame be broken in the splice, jaw, next to the cylinder saddle, or at any other point. The engine is returned to service in from ten to twelve hours.

Hundreds of thousands of pounds of Thermit are being used annually by railroad companies in the United States and Canada.

There is only one reason for this, and that is that Thermit produces results and we all know that "results count."

Our pamphlet No. 2144 will be of interest.

All Thermit and Thermit appliances are made in our Canadian shops.

GOLDSCHMIDT THERMIT COMPANY

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7300 So. Chicago Ave., Chicago

"STERLING"

HACK SAWS

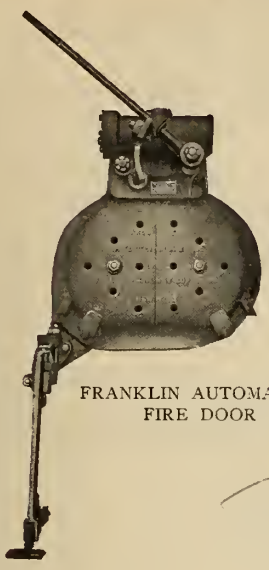
have for many years proven their value in thousands of machine shops.

If you use blades for cutting metal, you will make no mistake in buying saws that will return with good interest every dollar paid for them.

Manufactured by

Diamond Saw & Stamping Works

Buffalo, N.Y., U. S. A.



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QUICK ACTION

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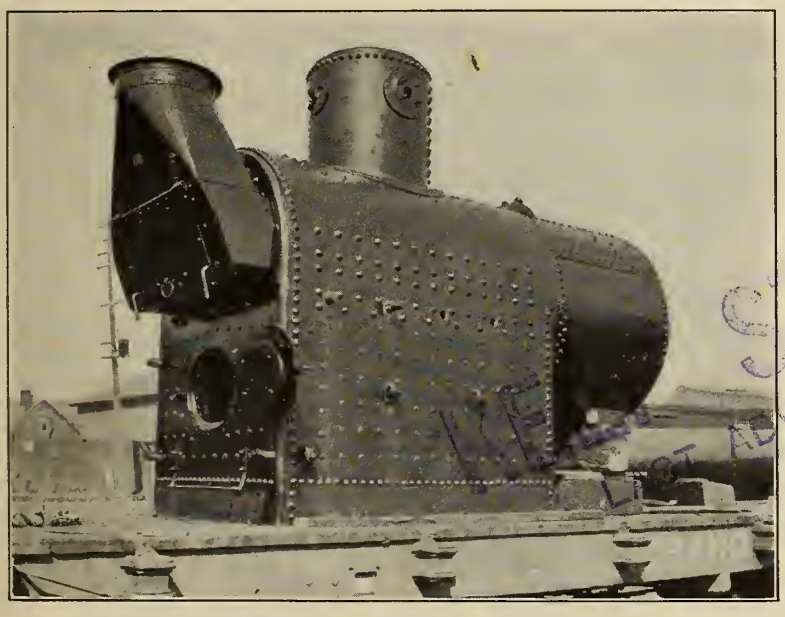

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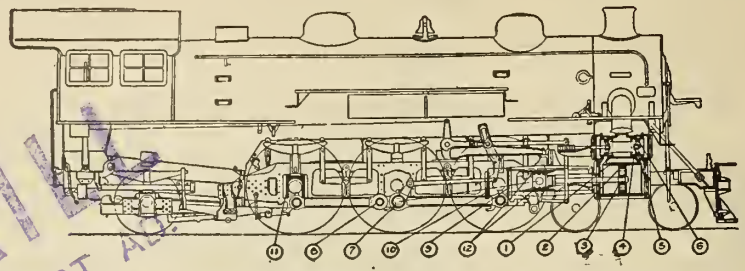

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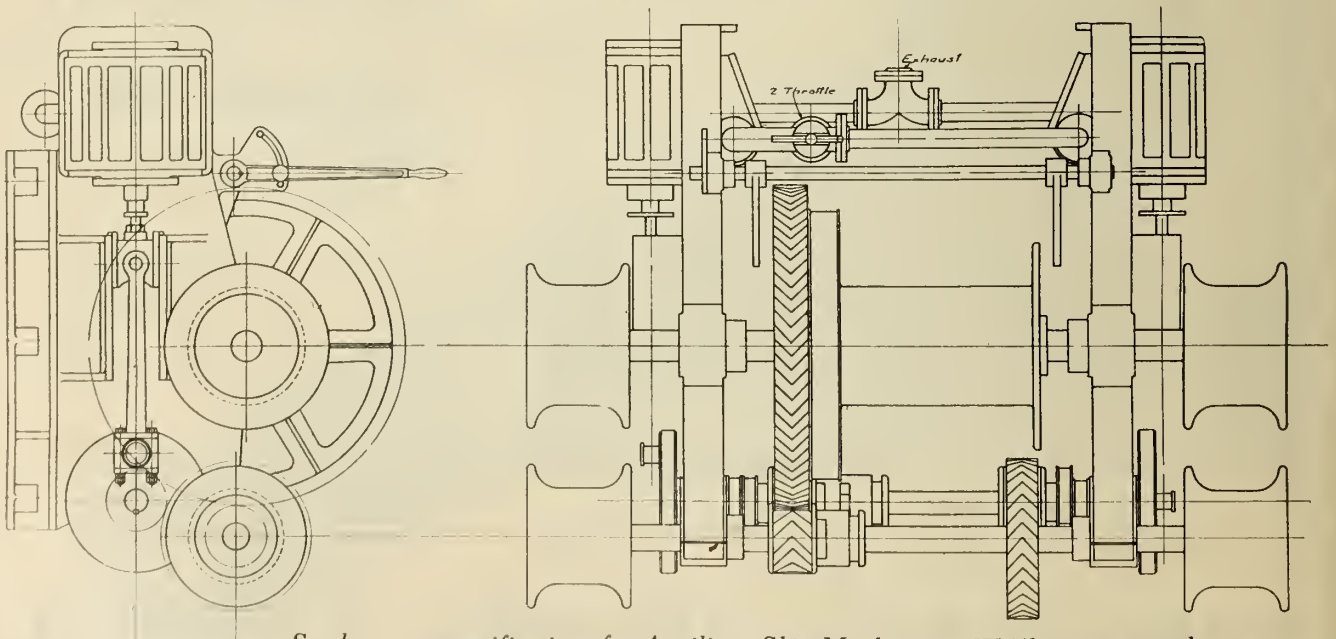

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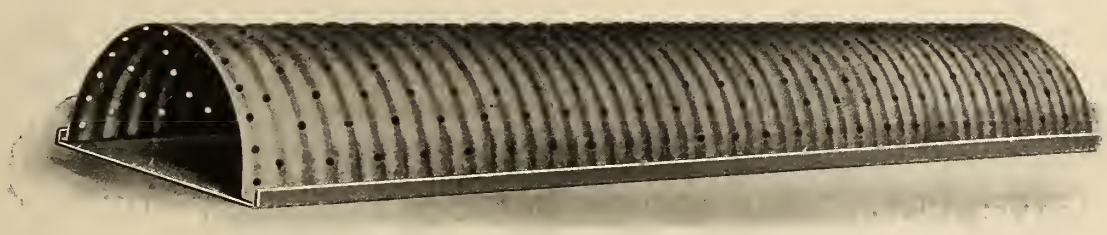

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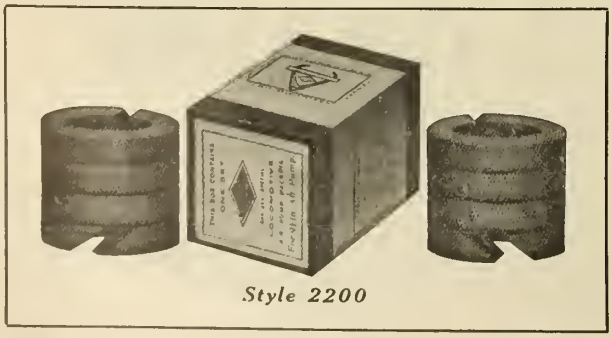

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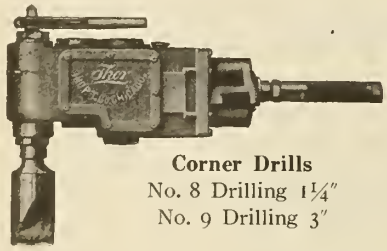

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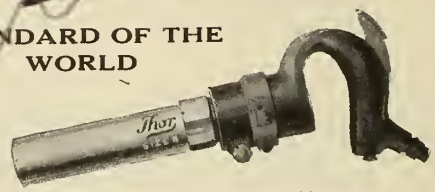

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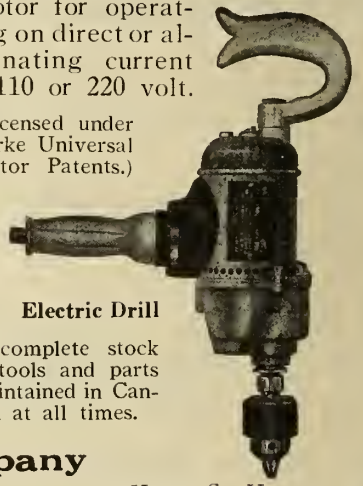

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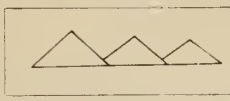
TRADE  MARK

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November, 1917.

Locomotive Design and Construction from a Maintenance Standpoint.

By W. H. Winterrowd, Assistant to Chief Mechanical Engineer, Canadian Pacific Railway.

It is a question if there has ever existed a locomotive house foreman who has not, at some time or other, had the feeling that if some part of a locomotive had been designed a little differently, he could make repairs quicker, easier, and at less expense. While in many instances he may have been justified in this feeling, there are, however, cases influenced by other factors which may have been of greater importance from the standpoint of ultimate economy of operation.

The type and size of a locomotive have an important bearing on certain details of design. A discussion of the factors relating to the selection of the desired type and size is far beyond the scope of this paper, as it would involve a thorough consideration of the economics of railway operation. Some of these factors, usually considered from the standpoint of both present and future, are grades, track curvature, train speeds, train resistances, kind and nature of business, size and type of existing locomotives, transportation expenses, maintenance of equipment, and physical conditions, such as clearances, bridges, turntables, locomotive houses, repair shops, terminal and water facilities, etc. Occasionally certain of these factors may be such that some detail of the resulting design, while undesirable from a maintenance standpoint, is unavoidable. However, the majority of locomotive details are free from other than purely local restrictions and may be designed almost entirely from a maintenance standpoint.

It should not be inferred from what follows that mechanical and operating men, as well as locomotive builders, have not given a great deal of consideration to the points mentioned. Very many locomotives in service today bear witness of such consideration. However, there are at present justifiable reasons for emphasizing and reviewing the importance of locomotive design from a maintenance standpoint. Today, under changed conditions, the railways are being called upon to render greater service than ever before. But little new equipment is available other than that which the railways may build in their own shops. Repair shops are being worked to capacity. Skilled railway mechanics are scarce. Material of all kinds is difficult to obtain. All of which means that maximum service must be obtained from every bit of existing equipment. It is, therefore, essential to consider every legitimate means whereby the out of service period of a locomotive may be decreased and the in service period increased. All new locomotives should be constructed to give maximum service with minimum maintenance. All locomotives being rebuilt, or modernized, should be turned out of the shops prepared to give similar results. Any improvement that can be made to any locomotive, new, modernized, or under repairs, which will result in increased service, increased efficiency, or decreased maintenance, will help to increase the capacity of the railways. The following covers briefly a few of the points worthy of consideration:

Boiler.—It is hardly necessary to state that a well designed boiler of ample capacity is easier and cheaper to maintain than one of smaller capacity and which has to be forced continually. The importance of ample capacity can scarcely be overemphasized, either from a maintenance or operating standpoint. Within its limits of weight and size, a boiler should be designed to have a capacity as large as possible, consistent with other governing factors. In this connection the valves of the superheater, the brick arch, and the feed water heater are unquestionable. These values have been practically demonstrated from the standpoint of economy as well as locomotive capacity. The maintenance of locomotive boilers is an important factor, the greatest difficulties being leaky flues, leaky mud rings, broken staybolts, and cracks in firebox sheets.

Knowing that firebox heating surface does a great deal more work per square foot than flue heating surface, boiler capacity does not depend upon long flues. Short flues are the easiest to maintain. Flue location and spacing should be carefully considered, so as to permit easy maintenance, proper distribution of stresses, with a minimum amount of staying, and also to facilitate washing out, particularly in bad water districts. Many failures are frequently the result of crowding in too many flues, placing them too close to the heel of the flue sheet flange, and the use of too small a bridge. The flue sheet flange radius should be carefully considered in relation to the flue layout. Too small a radius, with flues located close to the heel, will not give as much flexibility as may be desired and will make the top flues difficult to maintain. Continued expanding of the flues will cause the sheet to flow, often resulting in flange cracks. The bead on the flues adjacent to the flanges should always rest on the flat surface of the sheet and never on the curved inside surface of the heel. With 2¼ in. or greater diameter flues it is best that the width of bridges be not less than ¾ in. Assuming that these points have been taken into consideration, it is important to see that the shop layerout and driller follow the design. There have been cases where a layerout has located flues incorrectly and also added one or more. It is also important that flue sheet holes be drilled the proper diameter as it is almost impossible to keep flues tight in holes that are too large.

The radii of door and back head sheet flanges should be studied in relation to the staybolt stresses. A moderately large back head sheet radius will reduce the stress in outer rows of bolts by transferring a portion of the load to the wrapper sheet. Too small a door opening radius will frequently result in cracking of the sheet at this point as provision is insufficient for expansion.

Mud ring corners of ample radius will be easy to construct and maintain. Trouble due to small radius has, in many instances, been overcome by electric or acetylene welding the bottom edges of the sheets at this point to the mud ring.

Flexible staybolts reduce staybolt breakage. A careful investigation will indicate the zones of maximum staybolt stress and sheet movement. In these zones the flexible bolts will give good results and reduce staybolt renewals.

Washout plugs should be so located that all points of the firebox and barrel can be easily reached with standard washout equipment.

Grates should have sufficient air space, be free as possible from dead spots, and be easy to remove. Where certain kinds of fuel are used, properly designed dump grates may be a means of reducing the time the engine is on the ash pit.

As far as possible, all brackets, clamps, or fittings applied on the boiler or firebox should be so located that staybolts, rivets, or portion of caulking edges will be accessible with a minimum of labor.

In connection with the barrel of the boiler, points which may be mentioned are—throttle and dome arrangement which will permit interior inspection of the boiler without the removal of the standpipe; also the elimination, as far as possible, of all small studs. The latter will apply equally to all parts of the boiler under pressure.

Expansion slides, instead of an expansion sheet, under the front of the mud ring, will eliminate the maintenance of a considerable number of bolts and rivets. Proper consideration of all other expansion sheets will further reduce maintenance of many bolts and rivets and tend to eliminate the many resulting troubles as well.

The front end, or smoke box, should be arranged to permit of access to all parts with the least possible work.

Frames should be of ample cross section and well braced to hold them rigid. Maximum cross section may be of little avail unless accompanied by sufficient and properly located bracing. In this connection, it hardly seems necessary to mention the advantages of a valve gear located outside the frames. The outside gear has made possible better frame bracing, to say nothing of the advantages of easier inspection and maintenance of the gear itself. As far as possible, bolt holes in frames should not be located where stresses are greatest. Where cylinder design will permit, a one piece frame with a top tie splice seems desirable. Where large cylinders prevent the above arrangement, a one piece frame with ample depth under the cylinders and having no reduction in thickness, will give excellent service.

Cylinders.—The advantages of outside steam pipes are self evident from the standpoint of both construction and maintenance. Cylinders should have saddle faces well bolted together to prevent working. All other things being equal a double row of bolts is better insurance than a single row. Weakening grooves cut in covers will reduce repairs to a minimum in case of failure.

Motion.—All bearing pressures should be as low as consistent with good practice

in order to reduce the wear and resultant replacement. Ample pin length is desirable in order to obtain lateral stability. Arrangement of motion and design of back steam chest and back cylinder covers should be such that both valve stem and piston rod packing will be easily accessible. Fillets on pins, axles, etc., should be of ample radius. Small fillets are frequently factors in failure. Where possible a piston rod of sufficient length to permit piston ring renewals without the removal of the rod from the cross head will reduce maintenance cost. Rod bolts and wedges may be dispensed with by the use of solid bushes. Rods should be designed and arranged so that it may be possible to remove them with a minimum of labor.

The C.P.R. has found that knuckle pins with a small extension on the threaded end through which a strong flat cotter can be placed have been excellent insurance against the usual consequences of loose nuts. Valves of light weight will reduce the load on all valve parts and result in reduced maintenance. Selection of high grade, close grained, cast iron for cylinder and valve bushes, piston heads and rings, and in some cases rod bushes, is more than warranted in view of the increased mileage obtainable and the corresponding decrease in maintenance. If conditions permit the consideration of heat treated, or alloy steels, unbalanced forces may be very materially reduced by the use of light reciprocating parts. The reduction of such forces will in turn tend to reduce maintenance of pins, bushings, etc.

Equalization.—Locomotives should be equalized so as to secure the most efficient guiding power from both leading and trailer trucks, or wheels. This involves the proper distribution of weight and a means of keeping the proper amounts on the various axles at all times. In general, the best results seem to be obtained by dividing the equalizing system so that the division between the front and back systems is as directly under the centre of gravity of the locomotive as wheel base and other conditions will permit. The spring gear and equalizing system should receive particular attention when being erected and also when being repaired. The tops of the driving boxes should be milled out squarely and in a plane parallel with the journal bearings. The equalizer and saddles should be fitted to their seats squarely with the pin holes so that the engine will ride squarely on her springs and track properly. The same will apply to the trailer truck equalizers and spring rigging. Trailer trucks that do not carry the back of the engine level are responsible for much avoidable tire wear.

Spring and Brake Rigging.—The application of bushes will facilitate and cheapen renewal of worn parts. Hangers and their connections should be accessible and easily removable. A driver brake main fulcrum shaft in two pieces of equal length, the outer ends supported in bushed bearings integral with the main frames and the central portion supported by a sleeve, will give more even distribution of braking power and maximum accessibility for repairs and adjustments. Brake cylinders, if at all possible, should be located vertically, in order to reduce packing wear and provide accessibility. Brake shoe heads and hangers should be so constructed and hung that shoes will swing clear of wheels when pressure is released and permit easy application of new shoes. Safety hangers should be provided to support and prevent sagging of brake rods. The ratio of brake cylinder to brake shoe pressure should be kept as low as consistent, and should not exceed commonly accepted ratios. This will insure that false travel will be kept to a minimum.

Piping. — The importance of ample clamping and provision for expansion cannot be overemphasized. Piping should be as short as possible consistent with conditions. Accessibility is of prime importance. Piping should be so located that there is no obstruction of washout plugs, arch tube covers, pads, etc. Where pipes pass through the front of the cab, provision should be made for clearance or for sleeve protection to prevent wearing or cutting. The C.P.R. has found it a decided maintenance economy to place lubricator piping from cab to cylinders, etc., in a slightly larger wrought iron pipe where the feeds pass beneath the jacket and lagging. By this means the feed pipes can be removed or applied without the necessity of removing any outside covering. Air brake and steam piping should drain properly and contain no traps in which water can accumulate and freeze. It is desirable that pipes from the sand dome be as nearly vertical as possible, the bottom ends being securely clamped in alignment with the rail.

Miscellaneous.—Ash pans should be as simple as possible, and the sides should have sufficient slope to prevent the accumulation of ash under the grates. Swing doors can be suspended so that their own weight helps to keep them closed. This results in less strain on the door operating rigging.

Easy inspection and maintenance results from placing main reservoirs in an accessible location. Where this is impossible, and drain cocks are hard to reach, an extension handle, the end of which is easily accessible, makes the reservoir easy to drain.

Removable liners on locomotive and tender truck pedestals makes it easy to take up wear and reduce pedestal renewals. To prevent rapid wear between wheel hub liner face and driving box sufficient provision for lubrication should be made.

Shoes and wedges should be so designed that wear can be easily reduced and wedges kept in their proper place with a minimum of labor. Improperly maintained shoes and wedges soon result in increased maintenance of boxes, rods, pins, etc.

Pilots made of scrap boiler flues cost less to maintain than those of wood.

All oiling points should be made as accessible as possible. Handholds or small steps, properly located, to make some oiling points accessible, will soon pay for themselves. Lubricator chokes should be placed in proper position and located as near to the cylinder, or steam chest, as possible. Proper inspection and maintenance of chokes has been found the key to many lubrication troubles. The location of the lubricator in the cab where the feeds may easily be seen and adjusted will result in better lubrication. When located close to the front of the cab, or where the light is poor, proper adjustment is exceedingly difficult.

Four pane cab side windows are easier and cheaper to maintain than those containing one large pane.

Boiler jacketing should be applied in sections so that panels can be removed with a minimum of labor.

The foregoing are but a few of the multitudinous details which merit most careful thought. But little mention has been made of the possibilities of simplified design by the use of cast steel. It is felt that with the development of the cast steel industry and the production of castings which are practically equivalent to wrought iron, locomotive construction in the future may be greatly simplified. We are today, using castings that 10 years ago would have been deemed impossible to successfully cast. For example, one-piece locomotive frames are now under consideration and will soon be in experimental service. These consist of the two main frames and all cross braces cast in one piece. This is an indication of the degree of simplification that may be obtained. The maintenance of such parts has in turn been made possible by the development of the art of electric and acetylene welding.

The foregoing are simply a few indications of the importance of design in its relation to maintenance. To mention all the points that merit attention and to discuss them in detail would be far beyond the scope of this paper. Good and far reaching results can be obtained by inviting criticism and suggestions from those directly responsible for construction and maintenance. Simplicity, correlated with efficiency, should be one of the keynotes of locomotive design. This principle, which in other words is simply good judgment, will make for that degree of efficiency which will be reflected, not only in reduced maintenance costs, but also in the increased capacity of the lomocotive plant as a whole.

The foregoing paper was read before the Canadian Railway Club in Montreal recently.

United States Wireless Telegraph Stations.

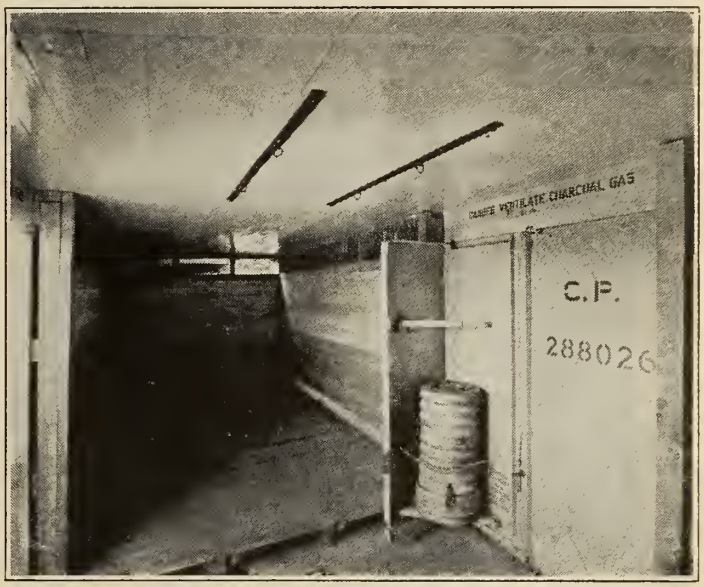
The United States Navy's new high radio station in the Hawaiian Islands, which was opened recently, is said to be the most powerful radio station in the world and is designed for direct communication with Washington and the Philippines. Exchange of messages was carried out on Sept. 20 between the radio station, Sayville, Long Island, and the Honolulu station, a distance of approximately 5,000 miles. This is said to be the world's record for long distance exchange of communication by radio, and marks a distinct advance in the radio art. The tests to date indicate that communication between Washington and the Philippines will easily be accomplished with but one relay through the Hawaiian station.

The Hawaiian station is one of a chain of high power radio stations under construction by the Navy Department. The principal stations completed to date, in this chain, are Arlington, Darien (Canal Zone), and San Diego. The remainder of the stations, at Caviet (Philippines), Guam, and Tutuila, will be completed during the next two months. The high power stations consist of three masts at each station to support the aerial, each mast being steel, self supporting. The apparatus is of the Poulsen arc type, which is standard in stations of the high power chain.

A Freight Rate Suit.—The C.P.R. is claiming through a Manitoba Court $60 for freight and other charges on a shipment of horses, from W. T. Alexander, who sent several horses to Calgary and other exhibitions west of Winnipeg, during the past season. The horses were conveyed in a palace car, and it is alleged that Mr. Alexander put some vehicles in the car also. The company claims that this raised the rate, and is suing for $60, the difference between the rate for the horses and the rate for the vehicles.

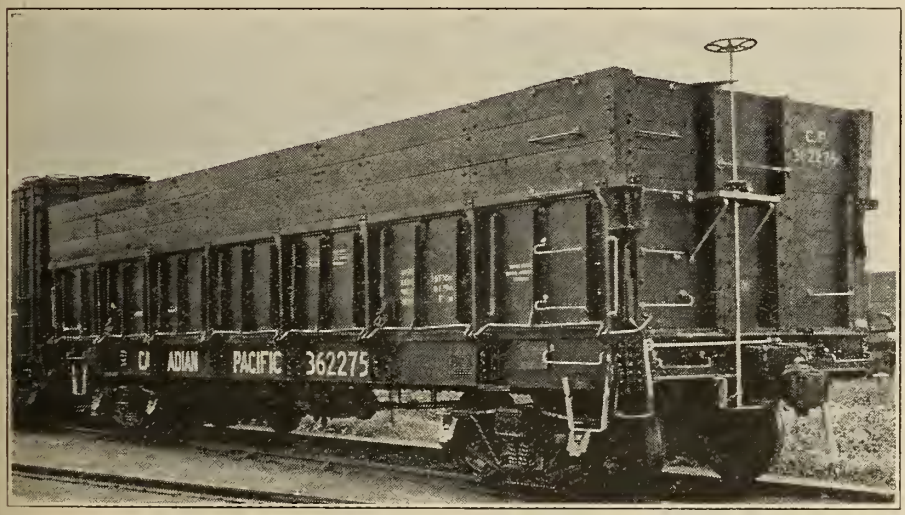
Conversion of Canadian Pacific Freight Cars.

Canadian Railway and Marine World for September and October contained some information about the conversion of a number of C.P.R. freight cars, since which time additional information as well as photographs have been received. Of the 336 single insulated refrigerator cars, converted to vegetable cars, 44 have been done at Angus shops, Montreal, and 292 at Winnipeg shops. On the 1,161 steel side dump ballast cars converted to coal cars the work was divided about equally between Montreal and Winnipeg shops. The 600 stone cars converted to coal cars were all done at Montreal.



C.P.R. Vegetable Cars Converted from Refrigerator Cars.

The 336 vegetable cars converted from standard single insulated refrigerator cars are 38 ft. 8 in. long over end sills and have standard refrigerator doors. After removing the ice bunkers, floor slats and meat racks, the side and end walls are covered with refrigerator insulating paper, and on the inside of this, vertical strips are spaced about 2 ft. centres along the sides of the car. These vertical strips are 2 in. square, fastened to 1 in. blocks, providing a total of 3 in. air space. The linings on the inside of the strips consist of ⅜ in. t. and g. insulation, 1 layer of insulating paper and 13/16 in. standard t. and g. car lining. This inside lining extends to within 6 in. of the car floor and to within about 12 in. of the ceiling, leaving an opening at top and bottom, so that the heat, supplied from the charcoal heaters, located at the centre of the car, may be circulated freely all along the sides and ends of the load, and return to the centre of the car through a space 5½ in. high provided by a false floor, which is made of two courses of t. and g. lumber with insulating paper between. The floor is in sections, about 4 ft. wide, extending between inside linings. This permits of the floor being taken up, whenever necessary, for cleaning underneath, and for repairs to underframe, draft timber bolts, etc.



C.P.R. Coal Car Converted from Side Dump Ballast Car.

At each end of the car there is a bulkhead, just in front of the hatch opening, constructed in the same manner as the side linings. The open space, above the side lining and end bulkhead, is covered with heavy wire mesh, to prevent consignees throwing culled vegetables over into the air spaces. At the bulkhead this mesh also prevents theft through the hatch opening. Hatch openings are equipped with standard insulated plugs, attached to chains, so that they can be lowered into the space back of the bulkheads when the car is operating under ventilation. Hatch covers are hinged so as to open toward the centre of the car. It is believed that this arrangement provides the best distribution of fresh air throughout the interior of the car.

The heating of each car is to be accomplished by means of standard no. 2 charcoal heaters. In moderate weather one or two heaters may be used in the collapsible galvanized iron heater cages attached to the inside of the car doors. These cages are so arranged that, when the heater requires to be recharged with fuel, it is not necessary to enter the car, and the exchange of air from the outside to the inside of the car is reduced to a minimum by one side of the heater cage being secured in a position to close the aperture of the open car door in much the same manner as revolving doors in public buildings. In severe weather additional heaters may be used suspended from the ceiling from substantial fastenings provided for the purpose.

The 1,161 fifty-ton side dump ballast cars, converted to coal cars, are fitted with end gates and extension sides so as to carry their maximum tonnage in bituminous coal. The extension sides consist of planks, 30 in. high, secured to stakes that pass through openings in the top channel of the steel side construction, and secured at the bottom in malleable blocks provided for the purpose. To prevent the wooden sides bulging near the centre of the car, tie rods are provided, reinforced against bending, by means of a cross timber, 3 x 8 in., securely supported and fastened at the ends to the extension sides. In order that these cars may meet the safety appliance requirements, additional hand holds are provided, and the brake mast, originally located on the corner, is removed, and a new brake mast and fittings are applied about 18 in. from the centre of the car.

The Canadian Northern Ry. Land Department has issued a homeseekers' guide descriptive of the resources of the districts opened up for settlement by its line through British Columbia.

New Grand Trunk Railway Passenger Stations.

The G.T.R. is erecting a new passenger station at Berlin, N.H., on the line between Portland, Me., and Montreal. We are officially advised that it is located on the site of the original frame structure, and will be a substantial one-story building of brick and stone. The plans show that the outside dimensions of the new station will be 137 x 29 ft., and walls 13 ft. high, with central bays projecting 6 ft. on the track side and 8 ft. on the city side. The office 41 x 22 ft., will be located in the centre of the building, and will provide accommodation for the agent, operator and clerical staff, the ticket, operating and telegraph sections being located toward the track. The women's waiting room will be on the right; and the general waiting room on the left of the office. Each waiting room will be 28 x 26 ft., and will be provided with lavatory accommodation. There will be entrances to each waiting room from the platform and from the street. The baggage room, 25 x 26 ft., will adjoin the general waiting room and will be connected with it by a counter and wicket. A covered platform will be provided under the main roof at the west end of the building. The basement, in which the heating plant and a room for storing records will be located, will extend under the baggage room, the remaining space not being excavated.

All construction below ground level is to be of concrete, above the floor line the walls will be of brick, faced with Saginaw pavers, with base and dressing of Vermont pink granite. The roof will be covered with green Ludowici tiling of imperial Spanish pattern. The interior finish will be dull oak stained dark, all walls and ceilings to be plastered. The waiting rooms will be panelled in oak to the height of the doors, the fields of the panels being covered with burlap and painted. The floors of the general waiting room, women's waiting room and office will be of maple laid diagonally, with a 15 in. border of the same; the lavatories will have tile floors, and the baggage room will be of ordinary boards. The building will be heated by hot water and lighted by electricity. It was designed in the office of H. R. Safford, Chief Engineer, and the contract has been let to Forgione & Rowans, Portland, Me. The estimated cost is $40,000.

A station is also to be built at Orillia, Ont., to replace the one destroyed by fire. It will be 54 x 142 ft., with umbrella roof, 22 x 34 ft. at each end. The foundation will be of concrete to grade line, with Longford stone base to height of sills (3 ft. 8½ in.). The superstructure above teh base will be of dark brown fire flash brick with a light mortar joint. The roof will be covered with asbestos shingles laid diagonally, roof to project 6 ft. beyond face of wall, with Georgian pine rafter heels and sheeted soffit, oiled. The lighting will be electric, of the a.c. system. It will be heated with hot water from boiler located in basement below baggage room. The street approach to the building will be by a porte cochere supported by brick and stone piers supporting same. The entrance doors will he of a French pattern, with divided lights on either side, having pilaster mullions between them and the door. On entering the station from the street side there will be a small alcove with vaulted ceiling, and seat on each side of same. The side walls of the main waiting room will be divided into five ornamental plaster arches with pilasters between. The plastering will be trowelled stucco finish, with white plaster moulds and ceiling beams. The floor will be of terrazo, composed of varied color marble chips. On one side of the main entrance there will be a ladies' rest room and lavatory, on the other side a men's smoking room and lavatotry. The smoking and rest rooms will be finished in Georgia pine with burlap dado to height of 4 ft., panelled with 3 in. strapping. Lavatories will be finished in cement, marked off with 4 x 4 in. blocks, tile pattern. The rest and smoking rooms will have French doors between them and main waiting room. The walls of main waiting room to height of 4 ft. will be covered with burlap. The office will be of quarter cut oak. The trim of main waiting room will be Georgia pine, and all wood work will be finished in bog oak. The platform will be of paving blocks with standard concrete curb.

At St. Catharines, Ont., a new station is to be erected on the site of the old one, but it will be considerably larger. The main building, containing waiting rooms, office and baggage room, will be flanked by large platform shelters and the Canadian Express building will be attached to the further end of the west shelter. The station proper will be one storey, containing a general waiting room, 77 x 22 ft., with an alcove, 22 x 10 ft. From this general room will be entered smaller waiting rooms, with lavatories attached for men and women respectively. The small waiting rooms will be 16 x 10 ft., and the lavatories, 11 x 10 ft. The ticket office, approximately 20 x 14 ft., will be placed on the centre line of the general waiting room, opposite to the alcove, and will have a large projecting bay, in which will be the telegraph operator's table, and the windows of which will command views of the tracks in both directions. A panelled oak screen will enclose the office and will project into the general waiting room and will be provided with two ticket wickets. The baggage room, attached to the west end of the building, will be placed in direct communication with the general waiting room for handling small hand baggage. There will be three entrances to the station, two directly facing the tracks, on each side of the ticket office, and one from the platform shelter at the east end. The basement will be devoted to the steam heating apparatus and storage of fuel. The Canadian Express Co. will be housed in a building, 44 x 25 ft., situated 65 ft. from the station proper, the intervening space being roofed over to form a platform shelter. The platform shelter will cover 4,500 sq. ft., and the buildings will have an area of 5,000 sq. ft. The building will be constructed generally of brick on concrete foundations. The walls outside will be faced with Hocking Valley vitrified brick, with grey sandstone dressing, and the roof will be covered with asbestos shingles. The floors of the station will be finished with marble terrazzo and those of the baggage and express rooms with cement. All interior finish in station will be Georgia pine and oak stained to bog oak color, the walls being plastered and painted and the dadoes panelled and finished with burlap. All lavatory walls will be lined with tiles to a height of 4 ft. All seating will be oak stained to match interior finish. The lighting will be by electricity.

News Print Paper Rate from Jonquiere to Wilkes-Barre.

The Interstate Commerce Commission gave the following decision recently in the case of Price Bros. & Co., Ltd., vs. Canadian Northern Railway, et al:

The complainant is a Canadian corporation, engaged in the manufacture of lumber, laths, shingles, wood pulp board and news print paper, with its principal office in the City of Quebec, and a paper mill at Jonquiere, Que. By complaint, filed April 28, 1916, it alleges that the combination rate of 37c per 100 lb. charged by defendants on a carload of news print paper shipped May 5, 1914, from Jonquiere to Wilkes-Barre, Pa., was unreasonable to the extent that it exceeded 27c per 100 lb. Reparation is asked. Rates are stated in cents per 100 lb.

The shipment, weighing 52,500 lb., moved as routed by complainant over the Canadian Northern Ry. to Montreal; C.P.R. to Delson Jct., Que.; Napierville Junction Ry. to Rouses Point, N.Y.; Delaware & Hudson Ry. to Wilkes-Barre. Charges thereon were collected in the sum of $194.25 based on a rate of 37c, composed of a rate of 15c to Montreal, which rate is not on file with this commission, and a rate of 22c beyond, which rate was legally applicable. At the time of movement a joint commodity rate of 27c was in effect on news print paper, in carloads, from Jonquiere to Harrisburg, Pa., over the Canadian Northern to Hawkesbury, Ont.; G.T.R. to Rouses Point; Delaware & Hudson to Wilkes-Barre; and Pennsylvania Rd. to Harrisburg, or Central Rd. of New Jersey from Wilkesbarre to Allentown, Pa., and the Philadelphia & Reading Ry. to Harrisburg.

This rate, which was published by the Canadian Northern, was not applicable on shipments to Wilkes-Barre, an intermediate point, but that carrier's tariff provided, conformably to rule 77 of Tariff Circular 18-A, for the publication, upon reasonable request therefor, of rates to any intermediate point not in excess of those to more distant points. This is a substantial compliance with the requirements of the fourth section.

Witness for complainant testified that on April 20, 1914, the Canadian Northern was requested to advise the best rate on news print paper from Jonquiere to Wilkes-Barre for immediate shipment; that on April 24, 1914, no reply having been received, the complainant communicated with defendant's agent over long distance telephone requesting the establishment of the Harrisburg rate to Wilkes-Barre; that on the same day a rate of 33c was quoted via the route of movement. No evidence was introduced tending to prove the rate applied unreasonable, complainant's sole contention being that it was forced to pay the rate assessed on account of the failure of the Canadian Northern to comply promptly with its request for the establishment of the Harrisburg rate to Wilkes-Barre. None of the defendants was represented at the hearing. In its answer the Canadian Northern denies that it was requested to establish the Harrisburg rate to Wilkes-Barre on the dates mentioned; that in response to request from complainant in June, 1914, it established, effective Aug. 17, 1914, a rate of 25c, since increased to 26c. Complainant requested the best rate for immediate shipment. This the Canadion Northern attempted to give. although by doing so it erroneously quoted a rate of 33c.

Northern has in other instances refused to establish rates at intermediate points, notwithstanding the fact that the tariffs naming the rates to the farther distant points carried reference to rule 77 of Tariff Circular 18-A. The effect of the failure to establish rates at intermediate points in conformity to such rule was fully discussed in Missouri River Building Stone Rates, 28 I.C.C., 269, and need not be repeated here. The establishment in August of the rate requested in June cannot, under the promise made in the tariff, be considered as properly prompt action. The complaint must be dismissed and an order will be entered accordingly.

Birthdays of Transportation Men in November.

Many happy returns of the day to—

F. W. Alexander, A.M.Can.Soc.C.E., Engineer, Alberta District, C.P.R., Calgary, born at Fredericton Jct., N.B., Nov. 22, 1878.

J. O. Apps, General Baggage Agent, C.P.R., Montreal, born at Tara, Ont., Nov. 9, 1877.

A. B. Atwater, Assistant to President, lines west of Detroit and St. Clair Rivers, G.T.R., Detroit, Mich., born at Sheffield, Ohio, Nov., 1845.

H. E. Beasley, General Superintendent, Esquimalt & Nanaimo Ry., Victoria, B.C., born at Hamilton, Ont., Nov. 10, 1862.

C. C. Bonter, General Baggage Agent, Canada Steamship Lines, Ltd., Montreal, born at Toronto. Nov. 13, 1884.

G. B. Burchell, Managing Director, Bras d'or Coal Co., Ltd., North Sydney, N.S., born at Sydney, N.S., Nov. 1, 1877.

J. R. Cameron, Assistant General Manager, Canadian Northern Ry., Winnipeg, born at Truro, N.S., Nov. 5, 1865.

F. H. Clendenning, Division Freight Agent, B.C. Coast Service and Ocean Steamship Lines, C.P.R., Vancouver, B.C., born at Montreal, Nov. 9, 1881.

F. Conway, City Freight and Passenger Agent, C.P.R., Kingston, Ont., born at Ernestown, Ont., Nov. 19, 1850.

W. L. Crighton, Advertising Agent, Canadian Government Railways, Moncton, N.B., born at Derby, Eng., Nov. 9, 1871.

W. R. Davidson, General Superintendent, Western Lines, G.T.R., Chicago, Ill., born at Everton, Mo., Nov. 8, 1871.

W. R. Devenish, A.M.Can.Soc.C.E., Superintendent, District 3, Intercolonial Division, Canadian Government Railways, Moncton, N.B., born in County Tipperary, Ireland, Nov. 21, 1882.

A. C. Douglas, acting Assistant General Purchasing Agent, C.P.R., Montreal, born at Montreal, Nov. 10, 1881.

W. Downie, ex-General Superintendent, Atlantic Division, C.P.R., now of Whitby, Ont., born at Rock Currie, Ireland, Nov. 12, 1850.

Jos. Dubrule, jr., Manager, Canadian Pacific Car & Passenger Transfer Co., and President, Prescott & Ogdensburg Ferry Co., Ltd., Prescott, Ont., born at Spencerville, Ont., Nov. 14, 1872.

R. L. Fairbairn, General Passenger Agent, Canadian Northern Ry., Toronto, born at Stillwater, Minn., Nov. 24, 1880.

W. A. Fitch, Assistant Superintendent, District 3, Intercolonial Division, Canadian Government Railways, Moncton, N.B., born at Kentville, N.S., Nov. 25, 1867.

J. E. Gibault, A.M.Can.Soc.C.E., Resident Engineer, Distirct 1, Transcontinental Division, Canadian Government Railways, Quebec, Que.. born at St. Jerome, Terrebonne County, Que., Nov. 16, 1887.

H. E. Haanel, Trainmaster, Regina Division, Saskatchewan District, C.P.R., Regina, born at Cobourg, Ont., Nov. 2, 1880.

Grant Hall, Vice President and General Manager, Western Lines, C.P.R., Winnipeg, born at Montreal, Nov. 27, 1863.

N. B. Jones, Car Foreman, C.P.R., Kenora, Ont., born at St. John, N.B., Nov. 9, 1869.

W. E. Ladley, Superintendent of Motive Power, Reid Newfoundland Co., St. John's, Nfld., born at Leeds, Eng., Nov., 1875.

J. McGillivray, Receiver and Manager, Inverness Ry. & Coal Co., Inverness, N.S., born at Nairn, Scotland, Nov. 13, 1867.

J. McMillan, Manager of Telegraphs, C.P.R., Montreal, born at Liverpool, Eng., Nov. 2, 1866.

A. B. McNaughton, General Yardmaster, Ottawa Terminals, G.T.R., Ottawa, Ont., born at Arnprior, Ont., Nov. 10, 1877.

C. Murphy, General Superintendent, Manitoba District, C.P.R., Winnipeg, born at Prescott, Ont., Nov. 20, 1865.

G. H. Nowell, Master Mechanic, Nelson Division, British Columbia District, C.P.R., Nelson, born at Montreal, Nov. 13, 1885.

W. J. Quinlan, District Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, born at Montreal, Nov. 21, 1883.

J. J. Rose, General Agent, Union Pacific System, Toronto, born there, Nov. 22, 1870.

G. H. Shaw, General Traffic Manager, Canadian Northern Ry., Toronto, born at Smiths Falls, Ont., Nov. 25, 1859.

P. D. Sutherland, General Agent, Passenger Department, Canadian Pacific Ocean Services, Ltd., Hong Kong, China, born at Toronto, Nov. 2, 1879.

L. C. Thomson, General Storekeeper, Eastern Lines, Canadian Northern Ry., Toronto, born at Kingston, Ont., Nov. 25, 1882.

H. P. Timmerman, Industrial Commissioner, Eastern Lines, C.P.R., Montreal, born at Odessa, Ont., Nov. 6, 1856.

H. E. Whittenberger, General Superintendent, Ontario Lines, G.T.R., Toronto, born at Peru, Ind., Nov. 9, 1869.

C. G. Washbon, Resident Engineer, Medicine Hat, Alta., born at Morris, N.Y., Nov. 27, 1887.

W. A. Whyte, District Freight Agent, Canadian Northern Ry., Regina, Sask., born at Hornsey, Eng., Nov. 24, 1890.

Distances and Gradients Between Quebec and Winnipeg.

In the Senate, on Sept. 3, Sir James Lougheed gave the following information in answer to series of questions by Senator Casgrain. The railway distances between Quebec and Winnipeg are as follows: National Transcontinental, 1,356 miles; Canadian Pacific, 1,587; Canadian Northern, 1,640.

The following information was supplied by the managements of the three railways mentioned in respect to the adverse grades:

Canadian Northern—Main line from Quebec to Winnipeg is built to 0.5% westbound and 0.4% eastbound grades, with the exception of 53 miles of westbound and 84 miles of eastbound short momentum grades, which can be reduced later when necessary. Of these latter temporary grades, there are less than 6 miles of 1% and less than 1 mile of 1.15% grade. All other temporary grades are less than 1%.

Canadian Pacific—Ruling grades vary from 0.3% to 1.1% on different subdivisions eastbound and from 0.4% to 1.25% on different subdivisions westbound.

National Transcontinental—The total adverse grade eastbound from Winnipeg to Quebec amounts to 608.0 miles in length and 8,946.7 ft. of a raise. The total adverse grade westbound over the same distance and between the same points amounts to 536.8 miles in length and 9,730.3 ft. of a raise.

Senator Casgrain accepted the answers to the distances, but stated that the information given in reply to the questions as to adverse gradients did not answer them at all. The "total adverse grade" is the grade up which a locomotive must haul a train. The total on the National Transcontinental Ry. and on the G. T. Pacific Ry. is 6,900 ft.; while on the C.P.R. it is 23,000 ft. On the C.P.R., for instance, between the Pacific and the Atlantic every ton of freight had to be raised to a height of 23,000 ft., or nearly five miles, while on the National Transcontinental it had to be raised only 6,000 ft. He thought the Canadian Northern would make a very good showing in this respect.

Senator Casgrain repeated his questions as to the total adverse gradients on Canadian railways between Quebec and Winnipeg, and between Winnipeg and Quebec, Sept. 18, and Sir James Lougheed in replw said the mileage between Quebec and Winnipeg was: Canadian Pacific Ry., 1,587 miles; Canadian Northern Ry., 1,640 miles; National Transcontinental Ry., 1,351 miles. The railways concerned had supplied the following information as to total adverse gradients: C.P.R., 681.51 miles in length, with 14,102 ft. of rise, going east; 659.83 miles in length with 14,578 ft. of rise going west. C.N.Ry.—9,655 ft. going east, 10,393 ft. going west. The elecation above sea level is: 18 ft. at Quebec, and 756 ft. at Red River bridge, Winnipeg. N.T.Ry.—608.0 miles in length and 8,946.7 ft. of rise going east; 536.8 miles in length and 9,730.3 ft. of rise going west.

The Necessity for Loading Cars Fully.

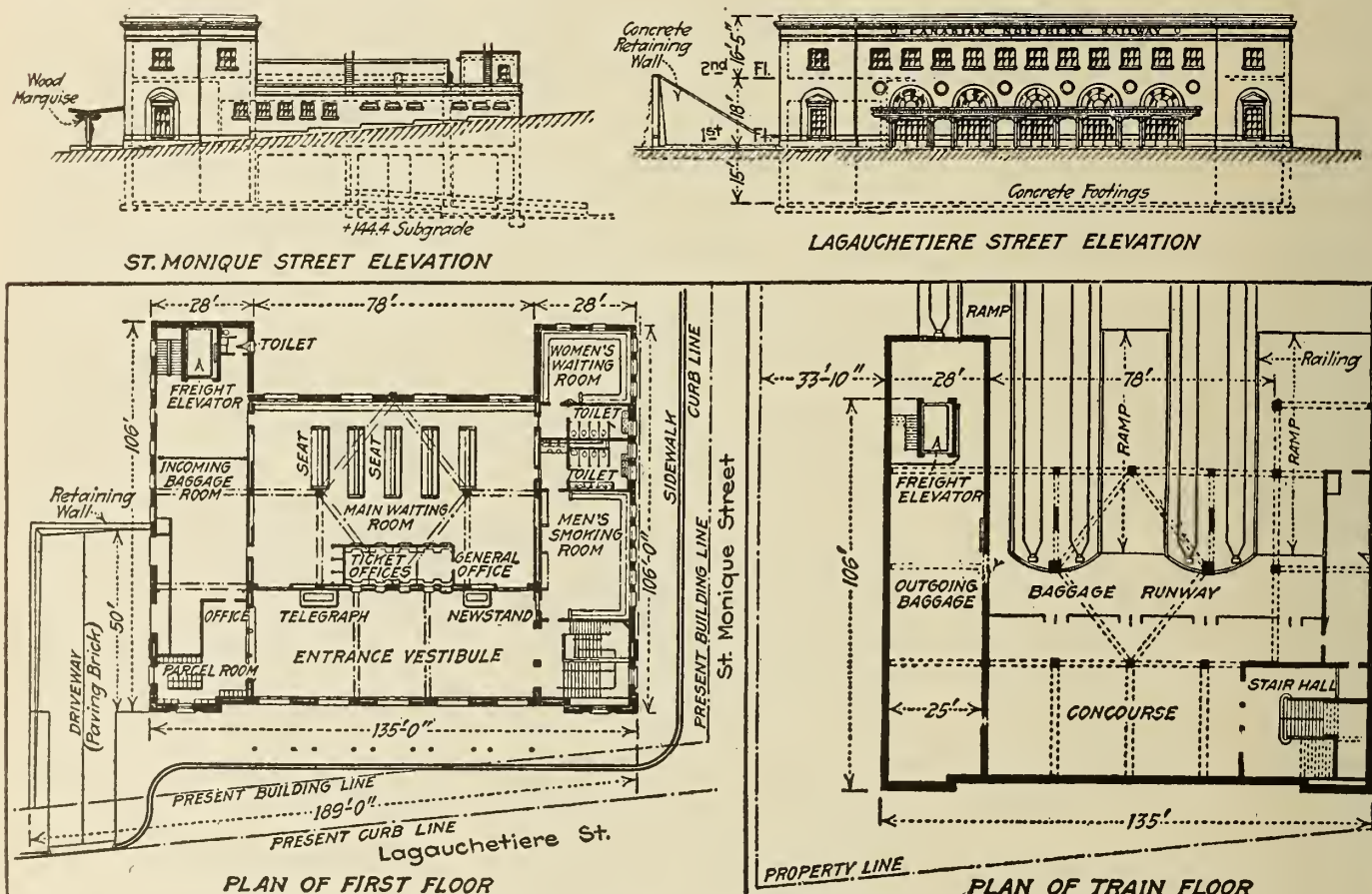
A. H. Harris, Director Overseas Transport, Montreal, has issued the following circular: The volume of Imperial Government war material and supplies which Canadian railways will be called upon to move to the Atlantic seaboard during the coming winter will tax their resources to the limit. If the demands of the allied governments are to be met, conservation of railway facilities is absolutely necessary. A careful analysis of government overseas traffic moved to winter ports last season shows an underloading of 30% in cars containing packing house products, ammunition, explosives, shells, forgings, acetate of lime, carbide, etc. In all cases cars should be loaded to the full capacity authorized by the various railways, and traffic of a bulky nature to the full cubic capacity of car. Had this rule been observed last winter, about one third less cars, and fewer locomotives, would have been required, while seaboard terminal accommodation would have been relieved to that extent. The question is one of national importance, and I earnestly request every Imperial Government contractor will realize the seriousness of the situation.

The Canadian Northern Railway's Station Work in Montreal.

Work is being pushed on the excavation for the station site at the C. N. R. terminal in Montreal which was described and illustrated in Canadian Railway and Marine World for July. More surface activity is seen than at any time since work on the Mount Royal Tunnel and Terminal project opened, there being since early in July three steam shovels, two 8-car trains of dump cars and numerous wagons opening up the site. Two whole city blocks, between Lagauchetiere and Dorchester Sts., are being excavated. The present station building as planned is a temporary structure occupying less than half of the area of the terminal site. The rest of the cut will remain open and the five track platforms will be protected by umbrella sheds. The portal of the Mount Royal tunnel is at Dorchester St., and from there the two 2-tunnel tracks will fan out to five for the station yard. The future plans are for the whole site to be occupied by combined station and office or hotel buildings, and two tracks will continue south down the right of way which the company owns leading directly to the waterfront.

There are 260,000 cu. yd. of earth and 18,000 yd. of rock to be removed from the terminal site—20,000 yd. of earth being at the temporary station building. The contract for the station proper was let to Norcross Bros. and the yard cut to Angus Sinclair & Co. The spoil from the building site is loaded by a steam shovel directly into the wagons in the pit, and the loads are snatched up an incline by an electric hoist. The wagons haul to Victoria Bridge, where the city is dumping for river front improvements.

The material from the yard cut is loaded by steam shovels into 6-yd. cars, and these are hauled by dinkies to a point over the east portal of the tunnel under Mount Royal. Here the spoil is dumped into a baffled chute, discharging into spotted 12-yd. tunnel cars. The tunnel track and electric power systems are complete from the east portal to beyond Cartierville. There are three dump trains running to carry the spoil to a fill, where the Cartierville yards are to be. No other traffic is being handled as yet through the tunnel.



The Canadian Northern Railway Temporary Station in Montreal.

Rolling Stock for United States War Railways in France.

The first locomotive for U.S. war service railways in France was completed in 20 working days, and others of this type are now being turned out at the rate of about 30 a day. About 680 of these locomotives and over 9,000 standard gauge freight cars are on order. Narrow gauge equipment for transportation along the battle front is also on order, and additional orders for both narrow and standard gauge equipment are likely.

The first order for war locomotives was placed on July 18 and the first one was completed on Aug. 9, in spite of the fact that the superheater boiler is constructed specially for this type of locomotive. Otherwise, the locomotives are much similar to locomotives built for the British Government. It is not the most powerful type used in the U.S., but on a road where the heaviest locomotives would haul a train of about 90 loaded freight cars this war locomotive would haul 60 loaded cars. Like all the equipment, it is painted battleship gray and bears the letters "U.S.A." for United States Army. The locomotive weighs about 166,400 lb., with the tender about 275,000 lb.

The box cars for the U.S. lines in France have about three times the capacity of the standard gauge box cars used by the French railways until recently. They have the same coupling equipment, etc., as the French rolling stock, so as to be interchangeable with it. The iron railing which runs the length of the car along the top is used to throw a tarpaulin over to protect the contents of the car from the weather. The inside length of the car is 36 ft. and its capacity 33 tons.

Increased Railway Rates, etc., in United States to be approved before coming effective. The U.S. Congress at its recent session passed the following amendment to the act to regulate commerce, sec. 15: "Provided further until Jan. 1, 1920, no increased rate, fare, charge, or classification shall be filed except after the approval thereof has been secured from the commission. Such approval may, in the discretion of the commission, be given without formal hearing, and in such case shall not affect any subsequent proceeding relative to such rate, fare, charge or classification." This means that the approval of a proposed increased rate, fare, charge or classification must be secured before the tariff containing it is filed with the commission by the carirer. The commission prepared a tentative form of order recently, to carry the provision referred to into effect, and submitted the same for consideration.

Cross Ties Bought in Canada in 1915 and 1916.

The following bulletin, prepared by the Interior Department's Forestry Branch, is based on reports received from 34 steam railways and 33 electric railways buying ties in 1916. The average prices in the tables are based on the cost at the point of purchase, and may or may not include long haul transportation charges. Only in the cases of those woods which are used in large quantities can value given be taken to represent the relative value of the wood.

A total of 7,839,515 ties was bought in 1916, an increase of 246,985 or 3.2% over 1915. This is the first year there has been an increase in the number since 1912.

Of the total ties bought 109,099 were treated with preservative to withstand decay. This is 2.5% of the total, compared with 5% in 1915 and 7% in 1914.

Jack pine heads the list in number of ties cut with 47.3% of the total. It has held this position since 1911, when it displaced white cedar. White cedar still holds well on to second place, the percentage of cedar ties being more than double that of hemlock its nearest competitor.

The average value was 42c a tie in 1916, compared with 44c in 1915. Electric railways bought 3.4% of the total in 1916, compared with 2.5% in 1915 and 1.1% in 1914. The electric railways paid an average of 44c a tie while the steam railways paid an average of 42c.

The number of ties imported in 1916 was 622,819, valued at $424,599, compared with 1,219,594 imported in 1915, valued at $749,407. The majority of these ties were of species of wood either not native to or not abundant in Canada such as oak, hard pine, chestnut, and gum.

Ties Bought, 1915 and 1916.

Kind of Wood.	1915. Number	1915. Value	1915. Av. value	1915. Per cent.	1916. Number	1916. Value	1916. Av. value	1916. Per cent.
Total	7,592,530	$3,329,029	$0 44	100.0	7,839,515	$3,307,319	$0 42	100.0
Jack pine	2,463,999	986,139	0 40	32.4	3,708,781	1,461,114	0 39	47.3
Eastern cedar	1,957,140	901,623	0 46	25.8	1,642,836	737,253	0 45	21.0
Hemlock	844,160	336,223	0 40	11.1	631,706	231,941	0 37	8.1
Tamarack	628,897	228,317	0 36	8.3	434,833	163,225	0 38	5.5
Oak	328,120	235,306	0 72	4.3	353,751	253,450	0 72	4.5
Eastern spruce	508,321	138,287	0 27	6.7	351,980	147,295	0 42	4.5
Douglas fir	402,020	156,917	0 39	5.3	328,711	100,946	0 31	4.2
Hard pine	96,637	66,765	0 69	1.3	126,901	84,775	0 67	1.6
Chestnut	53,924	26,898	0 50	0.7	77,093	52,774	0 68	1.0
Western cedar	14,129	5,063	0 36	0.2	65,472	24,094	0 37	0.8
Western hemlock	.....	.....	....	...	62,749	23,657	0 38	0.8
Beech	12,388	7,776	0 63	0.1	18,433	10,155	0 55	0.2
Maple	42,915	29,195	0 68	0.6	12,374	7,177	0 58	0.2
Red pine	2,000	500	0 25	*	8,401	1,620	0 19	0.1
Birch	189,153	187,572	0 99	2.5	6,229	4,148	0 67	0.1
Elm	21,178	9,735	0 46	0.3	4,495	2,029	0 45	0.1
Gum	13,195	6,209	0 47	0.2	2,588	1,166	0 45	*
Balsam fir	.....	.....	....	...	1,454	263	0 18	*
Ash	64	26	0 41	*	497	185	0 37	*
Western larch	.....	.....	....	...	228	52	0 23	*
Sycamore	13,195	6,209	0 47	0.2	.....	.....	....	...
Western spruce	1,086	269	0 25	*	.....	.....	....	...

*Less than one-tenth of one per cent.

Ties Bought, 1915 and 1916, by Steam Railways.

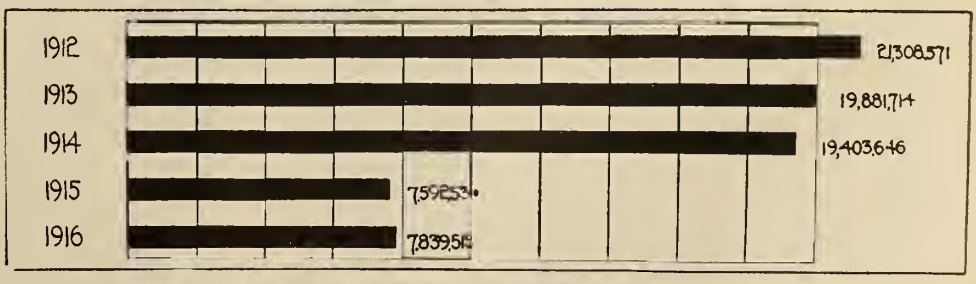
Kind of Wood.	1915. Number	1915. Value	1915. Av. value	1915. Per cent.	1916. Number	1916. Value	1916. Av. value	1916. Per cent.
Total	7,399,753	$3,229,000	0 44	100.0	7,572,878	$3,189,834	$0 42	100.0
Jack pine	2,462,733	985,706	0 40	33.3	3,668,195	1,443,529	0 45	20.7
Eastern cedar	1,864,398	856,584	0 46	25.2	1,570,586	705,359	0 45	20.7
Hemlock	776,586	300,335	0 39	10.5	509,474	206,898	0 36	7.7
Tamarack	619,923	224,331	0 36	8.4	414,367	154,105	0 37	5.5
Eastern spruce	508,321	138,287	0 27	6.9	344,937	144,702	0 42	4.6
Oak	315,907	225,284	0 71	4.3	339,712	241,763	0 71	4.5
Douglas fir	393,097	152,902	0 39	5.3	279,092	86,646	0 31	3.7
Hard pine	95,783	66,238	0 69	1.3	126,559	84,518	0 67	1.7
Chestnut	53,802	26,819	0 50	0.7	76,825	52,604	0 68	1.0
Western hemlock	.....	.....	....	...	62,749	23,657	0 38	0.8
Western cedar	14,129	5,063	0 36	0.2	55,972	19,344	0 35	0.7
Beech	12,388	7,776	0 63	0.1	18,372	10,121	0 55	0.2
Maple	42,915	29,195	0 68	0.6	12,374	7,177	0 58	0.2
Red pine	2,000	500	0 25	*	8,401	1,620	0 19	0.1
Birch	189,153	187,572	0 99	2.5	6,229	4,148	0 67	0.1
Elm	21,078	9,695	0 46	0.3	4,495	2,029	0 45	0.1
Gum	13,195	6,209	0 47	0.2	2,588	1,166	0 45	*
Balsam fir	.....	.....	....	...	1,454	263	0 18	*
Ash	64	26	0 41	*	497	185	0 37	*
Sycamore	13,195	6,209	0 47	0.2	.....	.....	....	...
Western spruce	1,086	269	0 25	*	.....	.....	....	...

*Less than one-tenth of one per cent.

Ties Bought, 1915 and 1916, by Electric Railways.

Kind of Wood.	1915. Number	1915. Value	1915. Av. value	1915. Per cent.	1916. Number	1916. Value	1916. Av. value	1916. Per cent.
Total	192,777	$100,029	0 52	100.0	266,637	$117,485	0 44	100.0
Eastern cedar	92,751	45,039	0 49	48.1	72,250	31,894	0 44	27.1
Hemlock	67,574	35,888	0 53	35.1	52,232	25,043	0 48	19.5
Douglas fir	8,923	4,015	0 45	4.6	49,622	14,300	0 29	18.6
Jack pine	1,266	433	0 34	0.7	40,586	17,585	0 43	15.2
Tamarack	8,974	3,986	0 44	4.7	20,466	9,120	0 45	7.7
Oak	12,213	10,022	0 82	6.3	14,039	11,687	0 83	5.3
Western cedar	.....	.....	....	...	9,500	4,750	0 50	3.6
Eastern spruce	.....	.....	....	...	7,043	2,593	0 37	2.6
Hard pine	854	527	0 69	0.4	342	257	0 75	0.1
Chestnut	122	79	0 65	0.1	268	170	0 63	0.1
Western larch	.....	.....	....	...	228	52	0 23	0.1
Beech	.....	.....	....	...	61	34	0 56	*
Elm	100	40	0 40	*	.....	.....	....	...

*Less than one-tenth of one per cent.



Ties Bought in Canada, 1912 to 1916.

Photographic Survey of Proposed Railway Route

A panoramic photographic survey of the proposed Oregon, California & Eastern Ry.'s route has been made to show the character and possibilities of the country to persons interested. The camera used was capable of making a picture 8 in. wide and up to 4 ft. long. It revolved on the head of the tripod and was driven by clockwork, so as to cover any desired degree of a circle. From a high point it was possible to cover a distance of 10 to 30 miles. In most cases it was found practicable to take a view from one valley to another, the points being selected by the engineer. Each picture was begun at about the point where the previous one ended.

It required 31 pictures, each 3 to 4 ft. long to cover the entire route. This work consumed 19 days, as much time was taken in getting to and from the viewpoints. Pictures were taken only under favorable conditions of light, atmosphere and absence of wind, in order to get good results. After the photographs had been made, the Chief Engineer had a draftsman plot the line of the survey upon each picture, so as to show the cuts, fills, structures and other main features.

The G.T.R. Time Service Department reports that during the past 12 months 8,914 employes' watches were submitted for approval, of which 96 were rejected. There was an average of 6,958 men coming under the watch inspection regulations each week, which means that the department checked ratings of 145,132 comparisons during the year.

Cost of Maintaining Electric Locomotives.

By an unfortunate error in type setting, which was not discovered in proof reading, it was stated in an article on this subject, in Canadian Railway and Marine World for August, that the average cost of repairs, power and lubricants on the Norfolk & Western Ry., for electric locomotive equipment, per 100 locomotive miles, for the six months ended Dec. 31, 1916, was $6,290. It should have been printed as $62.90. The article referred to is reprinted correctly as follows:

Electric locomotives on the Norfolk & Western Ry., according to that company's report for the six months ended Dec. 31, 1916, proved much more expensive to maintain and operate than steam locomotives. The average cost of repairs, power and lubricants for electric locomotive equipment per 100 locomotive miles was $62.90, while that of repairs, fuel, stores and lubricants for steam locomotive equipment was only $25.21. Repairs were respectively $32.69 and $12.70. Power and lubricants for the electric locomotives cost $30.21 per 100 locomotive miles, as against $12.51 for fuel, stores and lubricants for steam locomotives.

A table in the report divides the steam equipment by divisions and by classes of locomotive (passenger and freight). On the Pocahontas Division, which is the one electrified, repairs to freight and to passenger steam locomotives cost respectively $14.60 and $8.53, while fuel, stores and lubricants cost $15.86 and $6.01, making totals respectively of $30.46 and $14.54.

Association of Manufacturers of Chilled Car Wheels.

Following are extracts of the address delivered by President Geo. W. Lyndon, at the annual meeting, New York, Oct. 9.

It is needless for me to tell you that the chilled iron wheel stands on a firm foundation. You do not see the criticism in the press of the limitation of chilled iron for car wheel purposes. The recognition of a standard 850 lb. chilled iron wheel by the Master Car Builders' Association will dispel the illusions of our competitors with respect to the limit of the carrying capacity of chilled iron. It is a well established fact that the load that can be carried on a chilled iron wheel is only measured by the ability of the rail to support it. Many 33 in. 950 lb. chilled iron wheels are running under heavy locomotive tenders of 12,000 gall. capacity and are giving such a good account of themselves that no other type of wheel is considered by the users. It has taken a long time to bring this about, and the work we have accomplished this year is the result of persistent effort and close association with all the loading organizations in the country that study the wheel question, and we have also followed up with individual railways the introduction of new standards. We deal not only with the Master Car Builders' Association, but are in close association with the American Railway Association, the American Railway Engineering Association, the Interstate Commerce Commission, the Bureau of Standards, the American Society of Testing Materials, the American Foundrymen's Association, and the state universities. All this work through associations, railways and universities is educational and must be beneficial to our association in determining standards through the Master Car Builders' Association. We must pay the closest attention to the quality of our product. While we have accomplished two-fifths of our programme, we should not rest until we have secured the other three-fifths. We must see that the interior of the 625 and 725 lb. wheel receives recognition in the matter of increased plate thicknesses, which can only be obtained by additional weight. We must have a reasonable factor of safety when measured by excessive stresses encountered in service, and these heat stresses are now recognized everywhere, due to our educational campaign. We are not influenced by commercial considerations in asking for heavier wheels. We know the increased weights are necessary. Who knows what the result of the work of the University of Illinois may be? Perhaps the analyses of the stresses within the wheel may suggest a redistribution of the metal, and we may be able to decrease weights, which we will be ready to do with as great an interest as we are now anxious to increase them. With the flange improvement settled to our satisfaction and extra weight added to withstand heat stresses, the chilled iron wheel will have a future record as wonderful as it has maintained during the past 67 years of universal use.

The following officers were re-elected for the ensuing year: President & Treasurer, Geo. W. Lyndon; Vice Presidents, E. F. Carry, J. A. Kilpatrick; Secretary, Geo. F. Griffin; Engineer, F. K. Vial.

The Railway Situation in Hamilton.—The Hamilton, Ont., City Council has appointed a special committee to work out the recommendations of the Tye-Cauchon report for the rearrangement of the raial-way lines in the city and the entrance of new lines. Part of the committee's duty will be to take note of anything the railways at present entering the city propose to do which is at variance with the recommendations of the report, and to take all necessary steps to protect the city's interests.

Canadian Pacific Railway Honor Roll 28.

Anthony, Richard G.	Fitter	Moose Jaw	Wounded
Atcherly, Charles H.	Constable	Transcona	Wounded
Bateman, William W.	Conductor	Sutherland	Gassed
Bell, James	Bridgeman	British Columbia Dist.	Wounded
Bennett, William H. D.	Clerk	Sortin	Killed in action
Brown, Thomas	Laborer	London	Wounded
Buxton, Thomas H.	Trimmer	Lambton	Wounded
Calvin, George Stanley	Locomotive fireman	Bay Shore	Wounded
Cameron, James	Clerk	Calgary	Died of wounds
Canham, Arthur William	Helper	Calgary	Wounded
Carpenter, Clarence	Yardman	Fort William	Wounded
Chambers, Thomas	Apprentice	Angus	Wounded
Coles, Jack McIntyre	Storekeeper	Swift Current	Killed in action
Cottrell, Thomas	Conductor	Calgary	Killed in action
Craik James	Porter	Fort William	Killed in action
Crawford, Ernest John	Wiper	Coquitlam	Wounded
Dixon, Samuel	Porter	Swift Current	Wounded
Eady, Norman	Brakeman	Schreiber	Gassed
Earnshaw, Herbert	Stripper	West Toronto	Presumed dead
England, Stuart M.	Clerk	Montreal	Wounded
English, Frederick R.	Yardman	Winnipeg	Killed in action
Farthing, Arthur	Car repairer	West Toronto	Died of wounds
Forbes, Alexander	Trainman	British Columbia Dist.	Wounded
Goulet, Evariste Edward	Foreman	New Westminster	Wounded
Graham, Edward Brown	Assistant agent	Morris	Wounded
Graham, William	Trucker	Toronto	Wounded
Green, Charles	Watchman	Strassburg	Wounded
Greer, James Johnston	Pumpman	Irricana	Wounded
Griffin, Henry Norman	Brakeman	Moose Jaw	Wounded
Hannaford, John Henry	Helper	Lambton	Killed in action
Harrison, William	Conductor	Cranbrook	Killed in action
Hay, Thomas Stuart	Conductor	British Columbia Dist.	Died of wounds
Hemmings, Frederick H.	Apprentice	West Toronto	Wounded
Hermiston, Wesley E.	Clerk	Winnipeg	Wounded
Hicks, George	Car cleaner	Glen Yard	Wounded
Hill, William Henry	Locomotive fireman	Winnipeg	Wounded
Hope, Thomas	Yardmaster	Revelstoke	Wounded
Hunter, Ernest Scott	Waiter	Calgary	Presumed dead
Husband, Gordon	Clerk	Vancouver	Wounded
Johnson, Arthur	Trainman	Winnipeg	Wounded
Johnson, William Harry	Clerk	Winnipeg	Gassed
Kennedy, William	Porter	Calgary	Wounded
Kilgour, William	Telegraph agent	Portage la Prairie	Wounded
Lambert, Frank	Stenographer	Montreal	Died of wounds
Lavender, John Smith	Clerk	Vancouver	Died of wounds
McDonald, Daniel W.	Trainman	British Columbia Dist.	Presumed dead
Maclagan, Russel S.	Clerk	Montreal	Killed in action
Malloy, Thomas Oswald	Clerk	London	Wounded
Manson, Ernest	Stenographer	Winnipeg	Wounded
Martin, W.	Cook	Vancouver	Wounded
Mears, James	Cleaner	Winnipeg	Died of wounds
Middletotn, James R.	Assistant engineer	Vancouver	Died of wounds
Millership, Wilfrid E.	Locomottive fireman	East Calgary	Killed in action
Moorwood, Arthur Henry	Fireman	B.C. Lake & River Serv.	Wounded
Morgan, William Francis	Fireman	B.C. Coast S.S. Service	Wounded
Muir, William	Porter	Port McNicoll	Wounded
Murphy, James	Clerk	Kenora	Wounded
Murray, William	Trucker	Estevan	Wounded
Peterkin, Gordon Miles	Clerk	Ottawa	Wounded
Pyrke, Albert James	Trainman	Winnipeg	Killed in action
Raddish, Fred William	Clerk	Victoria	Died of wounds
Reid, Wilbert Christopher	Bolt threader	North Bay	Wounded
Rick, Edward A.	Machinist	Angus	Gassed
Riley, Harry Colhert	Locomotive fireman	Chapleau	Wounded
Robison, Norman	Wiper	Medicine Hat	Wounded
Shiels, Alexander	Machinist	Winnipeg	Killed in action
Sims, Frederick	Helper	Winnipeg	Killed in action
Spicer, Frederick J.	Cleaner	Toronto	Died while prisoner
Stark, Joseph G.	Brakeman	Calgary	Killed in action
Sutherland, Robert	Laborer	Fort William	Died of wounds
Thomas, Wilfred Ernest	Locomotive fireman	Souris	Wounded
Van Loo, Edward	Clerk	Calgary	Wounded
Walls, Nixon	Helper	Ogden	Killed in action
Walton, Barclay Evelyn	Locomotive man	Winnipeg	Killed in action
Wilbee, Victor	Car repairer	West Toronto	Wounded

Shown on Honor Lists to date: Killed, 515; Wounded, 1,111; total, 1.626.

Organization of Canadian Railway Association for National Defence.

An organization of Canadian railway officials has been formed to co-ordinate the various railway companies' work during the war, on similar lines to the American Railway Association's Special Committee on National Defence, which is generally known as the United States Railroads' War Board. Following are full particulars of the steps taken to effect the organization.

In response to a request from Sir Henry Drayton, Chief Railway Commissioner, stating that the Minister of Railways wished to consider the question of ensuring close co-operation between the various railways, and the common use of rolling stock, during the war, a meeting was held at the Minister's office in Ottawa, Sept. 24, at which, in addition to the then Minister, Hon. F. Cochrane, there were present: Sir Henry Drayton, Chief Railway Commissioner; G. A. Bell, Assistant to the Minister and Financial Comptroller; E. W. Beatty, K.C., Vice President and General Counsel, and Alfred Price, Assistant General Manager, Eastern Lines, C.P.R.; U. E. Gillen, Vice President in Charge of Operation, and C. G. Bowker, General Superintendent, Eastern Lines, G.T.R.; R. C. Vaughan, Assistant to Third Vice President, and S. J. Hungerford, Superintendent of Rolling Stock, Canadian Northern Ry.; and C. A. Hayes, General Manager, Eastern Lines, Canadian Government Railways.

The Minister stated that the object of the meeting was to advise the railway managements that the government considered there ought to be closer co-operation between them, and he suggested that the lines should be handled by a committee, composed of the best railway men in the country, who should arrange the distribution of equipment, as between the companies, in the event of one company being short and another having a surplus. He pointed out as the most important questions the distribution of equipment, the diversion of freight, and the per diem amount to be allowed by one company to another for rolling stock loaned. He suggested that the railway officials present should go to the United States, to get fuller particulars as to the operations of the U. S. Railroads' War Board.

Messrs. Beatty, Gillen, Price and Vaughan then went to New York, where they saw the Railroads' War Board's Secretary, and obtained a large amount of information as to the board's operations. Messrs. Gillen, Price and Vaughan afterwards went on to Washington, where they saw the Commission on Car Service, which works under the Railroads' War Board's directions, and obtained information as to its work.

Another meeting was held at the Minister's office in Ottawa, Oct. 11, there being present Hon. J. D. Reid, who has succeeded Mr. Cochrane as Minister; Sir Henry Drayton, Sir George Bury, E. W. Beatty, D. B. Hanna, and U. E. Gillen, the matter being further discussed and a decision arrived at to hold a more general meeting in Montreal.

In response to an invitation from Sir George Bury to the principal railway companies, the following officials met at the C.P.R. general offices in Montreal, Oct. 23: Sir George Bury, Vice President, Canadian Pacific; U. E. Gillen, Vice President, Grand Trunk; D. B. Hanna, Third Vice President, W. A. Kingsland, General Superintendent, Quebec Lines, Canadian Northern; C. A. Hayes, General Manager, Eastern Lines, F. P. Brady, General Manager, Western Lines; L. S. Brown, General Superintendent, Intercolonial and Prince Edward Island Divisions; H. H. Melanson, Passenger Traffic Manager, Canadian Government Railways; W. A. Griffin, Superintendent of Traffic, A. J. Parr, General Freight and Passenger Agent, Timiskaming & Northern Ontario; F. F. Backus, General Manager, Toronto, Hamilton & Buffalo; J. H. Walsh, General Manager, Quebec Central; E. C. Smith, President, Central Vermont; S. R. Payne, Manager, New York & Ottawa; H. Shearer, General Superintendent, Michigan Central; C. S. Sims, Resident Vice President, Delaware and Hudson; J. H. Hustis, Temporary Receiver, Boston & Maine; C. A. Montgomery, Vice President and General Manager, Algoma Central; A. L. Smith, President, Algoma Eastern. Mr. Hanna presided.

The following resolution was adopted unanimously: That the railways of Canada, realizing the national need of co-ordinating all industrial activities toward the prosecution of the war, and desiring by further co-operation with each other to render the most efficient possible service to the national cause, do hereby agree to establish, for the period of the war, an organization which shall have authority to formulate in detail, and from time to time, a policy of operation of all or any of the railways, which policy, when it is announced by such organization, shall be accepted and made effective by the several managements of the individual railway companies. To that end the following committees shall be established: (1) A committee of four, to be chosen from the chief executive officers of the several railways, to be called "The Special Committee on War and National Defence," which shall have general direction of the said scheme. (2) A committee to be chosen from the vice presidents and chief operating officers of the railways, composed of seven members, to be called "The Administrative Committee," whose duties shall be to carry out the policies laid down and arrangements made by the Special Committee on War and National Defence. That the Administrative Committee shall have power to appoint subcommittees, who shall have supervision over the following: (i) Passenger transportation; (ii) Freight transportation; (iii) Tariffs and statistics; (iv) Materials and supplies. That a general secretary to both committees shall be appointed, with such duties as shall be assigned to him, together with such staffs as he may require, to be selected by him from the employes of the several railways. That the expenses incurred in carrying out the arrangements of the above shall be assessed against all railways operating in Canada, on a basis of half the cost in proportion to the mileage operated, and the other half in proportion to gross earnings. This applies to mileage and gross earnings in Canada.

The committees were constituted as follows:

Special Committee on War and National Defence: Lord Shaughnessy, President, Canadian Pacific; Sir William Mackenzie, President, Canadian Northern; H. G. Kelley, President, Grand Trunk; A. H. Smith, President, New York Central.

Administrative Committee: U. E. Gillen, Vice President, Grand Trunk, Chairman; Sir George Bury, Vice President, Canadian Pacific; D. B. Hanna, Third Vice President, Canadian Northern; C. A. Hayes, General Manager, Eastern Lines, Canadian Government Rys.; F. F. Backus, General Manager, Toronto, Hamilton & Buffalo; J. H. Walsh, General Manager, Quebec Central; E. D. Bronner, Vice President and General Manager, Michigan Central.

Car Service Committee: A. Hatton, General Superintendent, Car Service, Canadian Pacific; J. E. Duval, General Superintendent, Transportation, Grand Trunk; W. A. Kingsland, General Superintendent, Quebec Lines, Canadian Northern; W. N. Ripley, Superintendent, Car Service, Canadian Government Railways; A. E. Locke, Superintendent, Car Service, Toronto, Hamilton & Buffalo; W. A. Griffin, Superintendent of Traffic, Timiskaming & Northern Ontario Railway.

Sub committees will be established in each province to report to the administrative committee.

W. M. Neale, acting Superintendent of Car Service, Canadian Pacific, Montreal, was appointed Secretary of the association and of all its committees.

Grand Trunk Pacific Railway Annual Meeting.

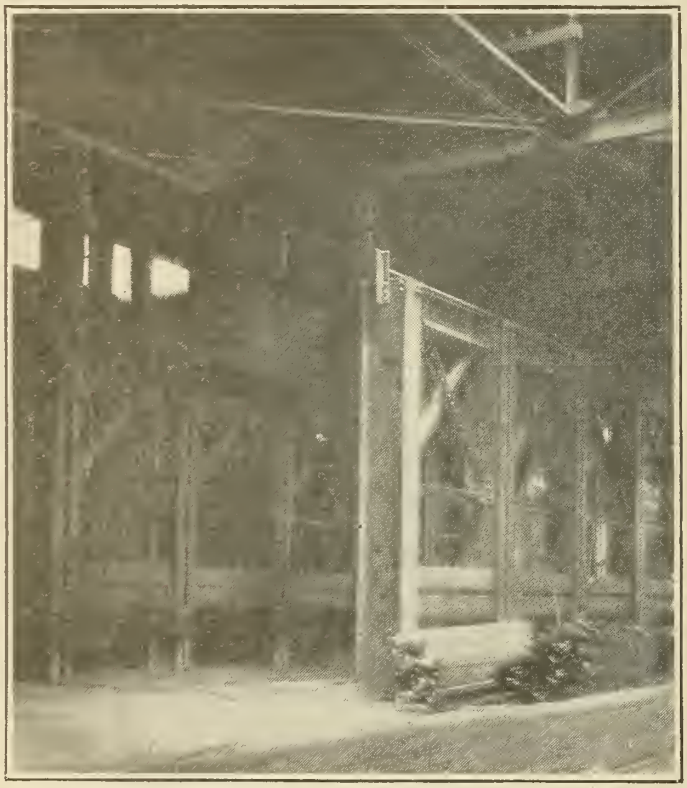
At the adjourned annual meeting of the company at Montreal, Oct. 17, A. W. Smithers, Chairman of the Board, in reviewing the results for the past year, said it was gratifying to note an improvement, although much remained to be accomplished before the property could be on a self sustaining basis. This condition, however, could only be the natural result of constructing lines through hitherto unsettled and undeveloped country, and was the history of all other transportation lines. It was therefore encouraging to note marked improvement in these conditions from year to year as the advent of the railway had made possible the discovery and opening up of almost unlimited natural resources. Notwithstanding the stopping of foreign immigration during the war, a very considerable immigration from the U. S. well equipped financially for farming and other pursuits, continued to go into the new country, and in addition to the increased acreage taken up, a number of lumber mills along the Fraser River, in British Columbia had been built to supply the increasing demand for lumber on the prairies, all of which made traffic for the railway.

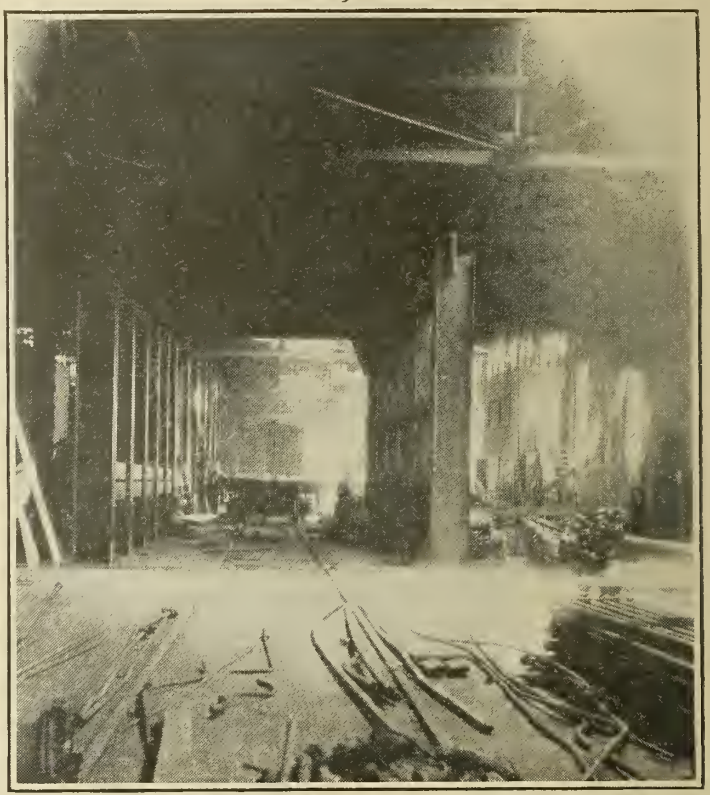
The following board was elected for the current year: A. W. Smithers, Chairman; H. G. Kelley, President; J. E. Dalrymple, Vice President; W. H. Biggar, K.C., Vice President and General Counsel; Frank Scott, Vice President and Treasurer; W. H. Ardley, Comptroller; Sir H. M. Jackson, J. A. Clutton-Brock, Sir W. L. Young, E. J. Chamberlin, Hon. R. Dandurand, W. M. Macpherson, P. McAra, J. B. Fraser and Jules Hone. The Vice President and General Manager is W. P. Hinton, and the Secretary is H. Phillips.

Systematic Thefts of Freight from C.P.R. cars west of Toronto brought about an investigation, the result of which was that at Galt, Ont., Oct. 15, a car checker and a brakeman were each sentenced to three years in the penitentiary; a fireman was sentenced to 12 months imprisonment, a yardman to six months imprisonment, and a fireman and a night operator were fined $200 each for handling whiskey which formed part of goods stolen.

Jacking Stall for Repairing Steel Cars.

The Canadian Government Railways has installed recently in its freight car shop at Moncton, N.B., a jacking stall for use in repairing steel cars, illustrations of which are given herewith. The frame was made up complete from second hand bridge material, and is of ample size to repair the largest type freight cars. It is 38 ft. 5 in. long and 16 ft. 3 in. wide, the top being open. The foundation is of concrete, 5 ft. deep, in which are embedded anchors for use in holding down a car when the jacks are applied for straightening bent and twisted portions of frame. Rails have been placed on the top of the frame, on which a traveller is operated. This traveller is fitted with a chain block, which is mounted on a small trolley, and is used for supporting rivet busters, jacks and other heavy tools when they are required. The frame has only been in use for a short time, but it has already proved its usefulness. It enables repairs to be made quickly to cars which are badly bent and twisted. We are indebted to G. E. Smart, Master Car Builder, C.G.R., for the foregoing information and for the photographs.





Jacking Stall for Repairing Steel Cars, Canadian Government Railways.

M. J. O'Brien, Limited, has been incorporated under the Dominion Companies Act, with an authorized capital of $20,000,000, and office at Ottawa, to take over and carry on all the business enterprises of railway contractor, lumberman, mine owner, manufacturer, agriculturist, etc., heretofore carired on by M. J. O'Brien, of Renfrew, Ont.

The U.S. Director General of Railways, S. M. Felton, has announced that units of railway officers, comprising division superintendents and their staffs, under a general manager and two general superintendents, are being sent to Russia to assist in the rehabilitation of the Trans-Siberian Railway.

Freight and Passenger Traffic Notes.

The C.P.R. General Agent's office and city ticket office at Detroit, Mich., has been removed to 199 Griswold St., from 7 Fort St. West.

The Alberta & Great Waterways Ry. winter train service will consist of a train leaving Edmonton at 8 a.m. on Wednesdays and Saturdays, returning from Lac la Biche on Mondays and Thursdays.

The Canadian Government Railways has placed separate combination dining cars on the National Transcontinental Ry. between Quebec and Cochrane, and standard sleeping cars between Quebec and Winnipeg.

The sailing of the C.P.R. afternoon steamer, leaving Victoria for Vancouver, B.C., was altered from 3.00 p.m. to 2.00 p.m., on Oct. 1, so that passengers might make connection with the 7.00 p.m. train east via the Kettle Valley Ry. route.

The Edmonton, Dunvegan & British Columbia Ry. gave notice recently that passengers and freight would be handled to points north of La Biche up to and including mileage 202, on the Alberta & Great Waterways Ry., every two weeks, instead of weekly as heretofore.

The National Transcontinental Ry. local passenger train operating between Winnipeg and Redditt, Ont., was discontinued Sept. 30. The mixed trains, which were run during the summer, one in each direction daily between Winnipeg and Graham, are being continued.

The Edmonton, Dunvegan & British Columbia Ry. put its winter time table in operation Oct. 20. The train for Peace River and other points leaves Edmonton at 4.30 p.m. on Mondays and Thursdays, instead of Tuesdays and Fridays, as during the summer. The return train leaves Peace River on Tuesdays and Fridays.

The Board of Railway Commissioners is being asked to sanction a joint railway rate from Winnipeg to the district opened up by the Edmonton, Dunvegan & British Columbia Ry. and its allied companies, the Alberta & Great Waterways Ry. and the Central Canada Ry. The rate is asked for via the Canadian Pacific, Canadian Northern and Grand Trunk Pacific Railways.

A press report states that the Board of Railway Commissioners has received a report from its engineering department favoring the granting to the Grand Trunk Pacific Ry of running powers over the Canadian Northern Ry. into Saskatoon, Sask., and that an order will be issued at an early date. The G.T.P.R. passes about two miles south of Saskatoon, and a bridge would have to be built over the South Saskatchewan River in order to provide a separate entrance.

A press report states that the railway companies are taking steps to put a stop to car tracers entering the railway yards at the different terminals. It is stated that representatives of large firms, particularly coal dealers, have been in the habit of visiting terminal points with a view to locating cars consigned to their plants, and when such shipments are located, get them out on the first train by remunerating men in charge of the yards. It is pointed out that this practice is a discrimination against the smaller manufacturers or dealers, who, perhaps, were unable to make such expenditures.

Suggested Union Station for Edmonton, Alta.—At a sitting of the Board of Railway Commissioners in Edmonton, Alta., Oct. 16, a Board of Trade delegation advocated the erection of a union station for all railways entering the city. The site suggested is between 101st and 109th Streets and between the Canadian Northern Ry. tracks and Jasper Ave. The commissioners stated that the board had no power to direct that railway companies erect union stations, but they would look over the proposition with a view of future developments.

Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

The G.T.R. Patriotic Association contributed $2,000 to the British Red Cross Fund, for which special contributions weer raised throughout the Dominion during October.

Overseas Transport Service.—A. H. Harris, Special Traffic Representative, C.P.R., Montreal, who has been loaned by the company, since early in the war, to direct the assembling and transportation overseas of supplies for the Canadian, British and other allied forces, is said to be now taking charge of four-fifths of Canada's export trade, inland and overseas. Between Aug., 1914, and Feb., 1915, War Office supplies were moved overseas in chartered vessels; between Feb., 1915, and date transports have been supplied by the Admiralty. The bunkering of transports is done on this side, under the direction and supervision of the Director, as is also the dry docking of vessels when necessary. Exclusive of officials and representatives at Vancouver, Calgary, Edmonton, Regina, Winnipeg, Fort William, Toronto, Quebec, Three Rivers, Halifax and West St. John, there is a clerical staff of 45 in Montreal. The number of checkers, longshoremen and dock laborers under the Director's control at the several Canadian ports used by the department exceeds 1,600 men, with a pay roll of $33,000 a week. The volume of tonnage cleared from the seaboard has been facilitated and delays minimized from the fact that the Canadian Pacific and Grand Trunk presidents, recognizing the growth of the transport service, considered concentration of authority necessary to efficient direction, and accordingly issued instructions to their operating officials that the regulation and control inland of all Imperial transport should be vested in the Director of Overseas Transport. Instructions were issued concurrently that all transport consigned to his order should be given priority over all traffic, excepting passenger. As a consequence, notwithstanding the volume of tonnage affected, transports have not been held for cargoes, nor has there been congestion at the Canadian seaboard, such as has been experienced at some U.S. ports. The actual time occupied by vessels in loading at Montreal has been under 4½ days.

The Timiskaming and Northern Ontario Railwaymen's Patriotic Association, up to July 31, contributed $15,223.67 to the Canadian Red Cross; $18,216.26 to the Canadian Patriotic Association, and $13,660.91 direct to enlisted employes. The T. & N. O. R. Commission has subscribed $5,000 and $10,000 respectively to the Canadian Red Cross and Canadian Patriotic Associations.

Toronto Ry. employes are reported to have contributed 860 men to the army, since war broke out.

Transportation of Troops to the Front in France.

In the first years of the war, the troops reached the trenches tired out by long and weary route marches. Now things are different, having been changed by the building of military railways. Official photograph issued by Press Bureau. Crown copyright reserved. Loaned by C.P.R.

PERSONAL NOTES.

Capt. W. H. Bennett, Quebec Regiment, C.E.F., who was reported killed, Aug. 13, was formerly on the C.P.R. staff at Montreal, enlisted in the early stages of the war as a private, and went overseas with the first contingent. His commanding officer wrote that he had taken his company over the top, and received a hit, but continued and reached the first objective, when, perceiving that an enemy machine gun in the final trench was accounting for several casualties, he, with three men, made a dash for the gun and captured it, receiving a fatal wound in so doing. He declined to have the wound dressed and ordered his men to carry on.

Lieutenant E. F. Ellis, Royal Field Artillery, B. E. F., who has been awarded the Military Cross, enlisted in Oct. 1914, and prior to that was in the Registrar's Department, C.P.R., London, Eng. The work which earned him the Military Cross is officially described as follows: "Whilst constructing observation posts on two separate occasions, he displayed the utmost disregard for his own personal safety, when the parties he was in charge of had serious casualties. Under heavy fire he withdrew his party to a place of comparative safety, and returned and proceeded to collect the wounded and get them away, remaining for half an hour in the shelled area until all was clear. By his splendid coolness and personal example he so influenced his men that the work of evacuating the wounded was promptly and successfully achieved."

Lieut. John S. Hall, formerly of the C.P.R. Mechanical Department, who was in no. 13 Light Railway Operating Co., R.E., in France, has been transferred to the Reinforcement Depot, Tank Corps, B. E. F.

Capt. W. B. Hanna, son of D. B. Hanna, Third Vice President, Canadian Northern Ry., who returned from England recently to Toronto, on sick leave, has relinquished charge of the Canadian Expeditionary Force's stationery service in London.

Sergt. N. W. Hanna, of Toronto, who has been wounded on four different occasions, has been awarded the distinguished conduct medal for services in connection with an enemy party which was destroyed after refusing to surrender. He was formerly engaged on C.P.R. construction.

Lieut. Hay Hebson, West Yorkshires, who was reported, Oct. 21, as killed in action, went overseas with the 2nd Canadian Contingent, and was formerly on the C.P.R. staff.

Lieutenant Frank Quinlan, Montreal, who was reported killed in action, Sept. 29, was a son of Hugh Quinlan, of Quinlan & Robertson, railway and general contractors, and prior to enlisting was engaged in the Canadian Government Railways shops at Transcona, Man. He went overseas with one of the pioneer units, and had been in France for about three months, where he was attached to a railway construction battalion.

Lieut. R. S. Richardson, of the 13th Light Operating Co., R.E., British Expeditionary Force, formerly Superintendent, Canadian Government Railways, Fort William, Ont., while riding up to the front in July, on a load of steel, which apparently had not been well loaded, and slipped off the car, carrying him with it, had one of his legs badly cut, both above and below the knee. He was in hospital for about 10 weeks, but a letter, dated Sept. 29, stated that his wounds had healed and that he had returned to duty, after spending a few days touring the war area and visiting Nieuport, Arras, Lens, Vimy Ridge, etc. His company has had a number of casualties, a few fatal, and a number gassed and shell shocked.

Major Ian Sinclair, of No. 1 Company, 13th Battalion, Royal Highlanders, of Montreal, who has been awarded the Military Cross, is the second son of Angus Sinclair, railway contractor, Toronto. He went overseas at the beginning of the war and has been throughout with the third brigade of the first Canadian division, having been wounded four times.

The Canadian Railway Troops' Work.

A recent report on the Canadian Railway Troops shows that during July last they did the following work on railway lines:

	Standard gauge.	Narrow gauge.
Miles located	21.10	82.71
" graded	11.12	90.27
" grade repaired	.02	28.00
" track laid	11.23	88.09
" ballasted	16.53	99.71
" surfaced	17.86	60.06

In addition to this, the troops, which approximate 8,000 men, maintained a large mileage of both standard and narrow gauge lines.

A London cablegram of Oct. 15 said: "Officers of the Canadian Forestry and Railway Troops found not technically suitable are being combed out. Those serving overseas are transferred to home establishment. Those who have served already as infantry officers are given an opportunity of transferring to a unit. The others are being returned to Canada."

The Militia Department, Ottawa, made public, on Oct. 10, a letter from Roland Hill, from the war correspondent's headquarters in France, in which he said: "The Dominion Railway Troops have done their little share so well that this morning the Director-General of Transport came over and congratulated them. All these Canadian units are delighted to be near the battle that is driving the Hun further than ever from coveted Ypres."

Roland Hill, in another letter given out by the Militia Department, Oct. 16, says: "In the present phase of warfare on the Western front, when trench lines have practically disappeared and advanced posts have taken their place, the Hun artillery does not attempt the old front line barrages that made life in the trenches so uncomfortable. It is that section immediately behind these new posts that comes in for Fritz's constant attention, and it is in this area that the Canadian Railway Troops have been winning great praise from all sections of the army. In this devastated country, where a pile of broken bricks overgrown with weeds, and a sign with a map location, designate a former village, where roads have altogether disappeared, and even cross country trails melt in a single night, the Canadian railway men construct and maintain their lines. They are shelled by Fritz, if anything, more persistently and in greater volume than the infantry, yet night and day tons of ammunition and rations and men go forward over repaired lines, feeding guns and men alike. The experiences of the railway troops are not lacking in excitement.

"A colonel of Peace River fame and his battalion from Alberta have one of these areas to look after. In a district which can be compared in size with Hamilton and Dundas, Montreal and Ste. Agathe, or Vancouver and Burnaby Lake, they have constructed nearly 150 miles of light railway. It has been planned strategically, so that if one line is suddenly destroyed by shells, traffic can be sent around another way. The men and guns ahead never want for anything. They are not supposed to be operating troops, but when the hot times come they are always found running trains and loading cars, in addition to doing their own jobs. They are the 'trouble hunters' of the first line of communication.

"During one of the recent attacks Sergt. Oscar Samson, of Alberta, was seriously wounded in the arm. Instead of trekking for medical assistance back in the rear, he attempted to carry on at his job of mending lines destroyed by Hun shells, so that more ammunition could be rushed up. Finally his arm got so painful he decided to go forward on the track that had been mended to an advanced dressing station he knew of. His wound had been fixed by a comrade, and his arm was tied up in an improvised sling. Samson climbed on a tractor that was hauling a trainload of Stokes gun ammunition. When they got to a junction near the front line, both guard and driver were wounded by splinters from a high explosive shell. The little train had made the crest of the grade and was gathering momentum every second, with the driver of the tractor hanging limp and unconscious from his seat. Samson pulled him up to a place of safety and shut off the engine, but the heavy train had too much headway to be stopped, and in addition the brake gear had been blown away by another shell. Climbing back to try to get the brakes on the cars, Samson came across the wounded guard. He had been knocked off the top of the truck and his foot, catching in the framework of the car, he was being dragged along with his head and shoulders bumping on the ballast. The Canadian sergeant released his foot, but failed in his attempt to gather him up into the rapidly moving car. About a hundred yards ahead was another ammunition train, its cargo of high explosive shells being unloaded at a battery position. By good luck, and a knowledge of braking learned on the grades in the Rockies, Samson managed to slow down his train just as it reached the standing trucks, and a serious collision and explosion were avoided. Then, although the shell fire was extremely heavy, the sergeant went back and rescued the wounded guard. Samson won the Military Medal for his splendid exhibition of pluck.

"There are many such tales of courage. In another of the Alberta companies there is an officer with a Military Cross and a man with a Military Medal. This is how they were won: The 'gang' were repairing a shelled-out switch which had marooned a trainload of Stokes gun ammunition, badly wanted up at the front. A fragment of Hun shell detonated a whole cargo, knocked out about a score of men, and sent Lieut. K. Corbitt spinning, a piece of casing cutting his Sam Browne belt in half. Corbitt gathered himself up and found his company commander wounded and unable to 'carry on.' The lieutenant, assisted by acting sergeant Simpson, also from Alberta, dived in among the burning truckloads of ammunition and removed all the wounded to a safer place and got them medical assistance. With the same non-commissioned officer, he vainly tried to put out the fire with sand ballast, but the shells were exploding too fast, and the flames continued to gain headway. Simpson, finding it was impossible to save the ammunition, crawled around and collected the railway tools that had been scattered by the first explosions."

In another letter, made public in Ottawa, Oct. 23, Roland Hill said: "Today the Colonel of Canadian Railway Troops invited me to accompany him to an exhibition he was giving to French, Belgian and British engineers. He walked along a new main military line built with rails from Canadian railways. The ties had been cut in a miniature Canadian sawmill not many miles south, in woods where the Kaiser's Uhlans roamed early in the war. Out in the large yard there was a big steam shovel eating away the side of the hill, filling a truck a minute—the Belgian officer timed the great engine—to go forward where the light railway crews—Canadians there, too—were ballasting new lines. Fritz's airmen spotted them one day, and for weeks afterwards his artillery searched for them, wasting hundreds of rounds of ammunition. The Germans thought it was some new mastodon of destruction. It used to work on a Canadian Pacific grade in Northern Ontario. When the Huns broke back along the coast they left various bits of tangled machinery. The Canadian Colonel gathered these up, commandeered a big railway truck, and built a track layer in his own blacksmith shop.

"At railhead there is a young Canadian railway transport officer who used to be train dispatcher at a little place on the prairie. In the next yard another (in Canada he was manager of an electric railway company) is quartermaster for railway stores.

"The dockmaster at the great port away back was in the stevedoring business on the Pacific coast. Under his command were more transporters and cranes than Vancouver and Victoria combined will see for years. In the dock was a tramp ship straight from his home on the Pacific coast.

"A lieutenant-colonel from Nova Scotion, with his labor battalion men from all parts of the Dominion, who knew the job, had trebled the port for unloading the rails. At another port I found a colonel, an Ontario member of parliament, handling a bunch of Chinese coolies piling lumber, and even the native interpreter claimed Canadian association with sawmills on False Creek."

The C.P.R. and Vancouver Tide Lands.—A claim is being made in an action brought by the Pacific Box Co. against J. G. Woods in a British Columbia court that the C.P.R. has no right to collect rents on certain waterfront land on the north side of False Creek near the Courbe St. bridge, Vancouver. Woods originally leased the property, which comprises two parcels, one the property down to high water mark, the other the reclaimed land beyond that point. Woods leased to A. J. Forsythe, who gave the Pacific Box Co. permission to store lumber, etc., on the wharf. Forsythe, it is alleged, was in arrear with his rent, and Woods seized lumber belonging to the Pacific Box Co. in satisfaction. A press report states that point raised will involve the question of the C.P.R. title to all of the tide lands it is using in Vancouver.

C.P.R. Inspection Trip.—Sir George Bury, Vice President, and other officers completed their inspection trip over the company's western lines, Oct. 1, and left Winnipeg, Oct. 2, reaching Montreal, Oct. 4. R. B. Angus, the oldest director of the company; F. L. Wanklyn, General Executive Assistant, and J. G. Sullivan, Chief Engineer, joined the party in Vancouver, Sept. 25, and returned east with it.

The Esquimalt & Nanaimo Ry., a C.P.R. subsidiary, has issued a number of writs asking for an injunction restraining further prospecting on lands on the Chemainus land district, Vancouver Island. Among the defendants is the Canadian Collieries (Dunsmuir) Ltd.

Mainly About Railway People Throughout Canada.

C. R. Morrill has been appointed Assistant General Manager of the Southern Pacific Ry, at Houston Texas.

F. P. Drake, M.D., one of the G.T.R. surgeons at London, Ont., died there suddenly Oct. 7.

Col. F. Firebrace, R.E., who died in England recently, was a director of the G.T.R. and the Grand Trunk Pacific Ry., and also of the Great Indian Peninsular Ry.

N. R. DesBrisay, District Passenger Agent, C.P.R., St. John, N.B., was presented with a silver coffee urn and serving tray by his staff, recently on the occasion of his marriage.

Hon. Chas. Stewart, M.L.A., who has succeeded Hon. A. L. Sifton as Premier of Alberta, has also been appointed Minister of Railways and Canals for the province, as well as President of the Council.

Miss Florence Page Black, daughter of James Black, Claim Agent, British Columbia Division, C.P.R., Vancouver, was married there recently to W. Harold Sim, of that city.

Geo. W. Yates, for many years secretary to Hon. Frank Cochrane, until recently Minister of Railways, has been appointed secretary to the Prime Minister, Sir Robert Borden.

J. Sydney Roe, who has been private secretary to Hon. J. D. Reid, as Minister of Customs, for the past six years, will continue to act as private secretary for him as Minister of Railways.

A. Grills, General Roadmaster, G.T.R., St. Thomas, Ont., was elected President, Roadmasters and Maintenance of Way Association, for the current year, at the recent annual convention in Chicago.

W. A. Wilson, who retired from the position of Canadian Freight Agent, New York Central Lines, at Toronto, recently, has been given a silver service and an illuminated address by a number of friends.

Lincoln Smith, Assistant to Manager, B.C. Coast Steamship Service, C.P.R., Victoria, is reported in a press dispatch as about to resign to become Managing Director of Peter McQuade & Sons, ship chandlers, Victoria.

George Beckingham, Superintendent of Track, G.T.R., Montreal, was elected a member for four years, of the executive Committee of the Roadmasters and Maintenace of Way Association, at its recent annual convention in Chicago.

R. F. Hill, Assistant General Freight and Passenger Agent, Toronto, Hamilton & Buffalo, Ry., Hamilton, Ont., was presented with a cabinet of silver by head office officials and employes, Oct. 11, on the occasion of his recent marriage.

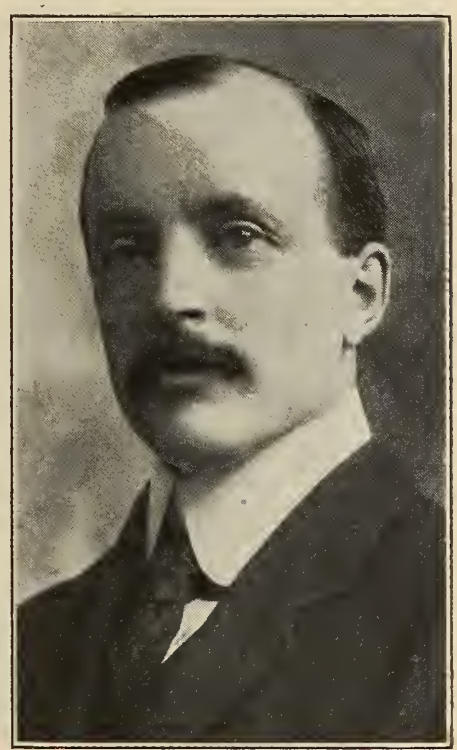
Hon. Hugh Guthrie, M.P. for South Wellington, Ont., since 1900, who has been appointed Solicitor General in the Dominion Government, was for several years Chairman of the House of Commons Railway Committee.

Wm. Murdoch, City Engineer, St. John, N.B., died there suddenly, of apoplexy, Oct. 8, aged 69. He was the son of Wm. Murdoch, one of the first conductors on the European & North American Ry., betweeen St. John and Shediac.

Charles E. Donovan, who died in Toronto, Oct. 9, was at one time freight agent on the Toronto, Hamilton & Buffalo Ry., and was subsequently employed by the Quaker Oats Co. at Chicago, and latterly at Traffic Manager, T. Eaton Co., Toronto.

G. C. Peters, local manager, New Brunswick Telephone Co., Moncton, N.B., who died there suddenly, Oct. 3, aged 73, was engaged on construction on the Intercolonial Ry., between Dorchester and Sackville, N.B., many years ago. He had been with the New Brunswick Telephone Co. for over 30 years.

F. P. Gutelius, formerly General Manager, Canadian Government Railways, Moncton, N.B., and now Vice President and General Manager, Delaware & Hudson Co., Albany, N.Y., has also been elected Vice President of the United Traction Co., Albany, and the Schenectady Ry., Schenectady, N.Y., which companies operate electric railways in the Albany and Schenectady districts.



A. C. Boyce, K.C., D.C.L.,
who has been appointed a member of the Board of Railway Commissioners for Canada.

H. S. Rogers, Maintenance Engineer, Delaware & Hudson Co., Albany, N.Y., has been appointed Division Engineer in charge of maintenance of way on the Susquehanna Division, at Oneonta, N.Y. This is the division of which J. K. McNeillie, formerly General Superintendent, Canadian Government Railways, Moncton, N.B., was appointed Superintendent recently.

F. C. Salter, European Traffic Manager, G.T.R., London, Eng., expressed regret at his inability to accept an invitation to attend the unveiling of the Bell memorial, at Brantford, Ont., Oct. 24, in commemoration of the invention of the telephone there. As a boy, he was one of the party to speak over the world's first telephone line in 1876 between Brantford and Tutela Heights, where the inventor, A. G. Bell, lived.

W. W. Atterbury, Vice President of the Pennsylvania Rd., who is now supervising railway operations for the U.S. troops in France, was nominated, on Oct. 2, to be a brigadier general in the National Army. He was appointed Director General of Transportation of the U.S. Expeditionary Army in France, on Sept. 14, after a month's service in active charge of all railways, docks and highways under General Pershing.

James William Doyle, whose appointment as General Manager, Cape Breton Ry., St. Peters, N.S., was announced in our last issue, was born at Summerside, P.E.I., Oct. 12, 1872, and entered railway service in April, 1895, since when he has been, to Sept. 1902, clerk, C.P.R., Montreal; Sept. 1902, to July 1903, accountant, Montreal Terminal Ry., Montreal; July 1903 to July 1917, Auditor, Cape Breton Ry., St. Peters, N.S.

Albert John Michener, whose appointment as General Foreman, Michigan Central Rd., St. Thomas, Ont., was announced in our last issue, was born there, Nov. 9, 1874, and entered M.C.R. service July 3, 1889, since when he has been, to July 3, 1894, apprentice on car building; July 3, 1894, to Dec. 1, 1902, car builder; Dec. 1, 1902, to June 1, 1908, freight and wood machine foreman; June 1, 1908, to Oct. 1, 1916, Coach Foreman; Oct. 1, 1916, to Aug. 14, 1917, Assistant General Foreman, all at St. Thomas, Ont.

Milo Clifton Dawson, who died at Toronto recently, was born at Beekmantown, N.Y., June 28, 1852. He was, from Aug., 1887, to June, 1890, conductor, Wagner Palace Car Co., Weehawken, N.J.; June, 1890, to June, 1898, Assistant District Superintendent, same company, Weehawken, N.J.; June to Sept., 1898, agent, same company, Saratoga, N.Y.; Sept., 1898, to Feb., 1900, Superintendent, same company, Montreal; Mar., 1900, to Oct., 1906, agent, Pullman Co., Toronto; November, 1906, up to the time of his death, conductor. same company, Toronto.

D. F. Burk, who died at Port Arthur, Ont., Sept. 29, aged 68, was associated with a number of land development schemes in western Ontario for several years. In partnership with a brother he entered railway contracting business in 1884, and carried out several contracts. He was, at various periods, Vice President and director, Port Arthur, Duluth and Western Ry.; President and director Ontario and Rainy River Ry., both of which have since been incorporated with the larger systems, and President, St. Joe Ry. He was also at one time Manager and Secretary, Lake Superior Dock Co.

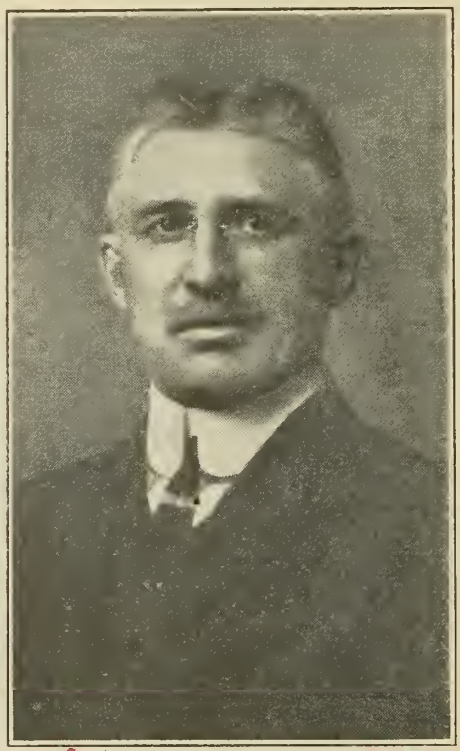
Arthur Cyril Boyce, K.C., who has been appointed a member of the Board of Railway Commissioners, to fill the vacancy caused by the retirement of Jas. Mills some time ago, was born at Wakefield, Eng., Sept. 12, 1869. On coming to Canada he took a law course, and was admitted a barrister, with honors and bronze medal, in 1890, and make a K.C. in 1908. He practised at Port Arthur, Rat Portage and at Sault Ste. Marie, Ont., and was elected Chancellor of the Algoma Diocese in 1910. He was elected M.P. for Algoma in 1904 and was re-elected, sitting until the dissolution of parliament recently.

George C. Conn, Freight Traffic Manager, Pere Marquette Ry., Detroit, Mich., has resigned, to enter private business. He was born at Woburn, Mass., July 1, 1867, and entered railway service Oct. 1, 1864, in the Boston & Lowell Rd.'s general freight department, and was later, to 1888, with the Boston & Maine Rd., since when he has been, to 1890, Travelling Freight Agent, Pennsylvania Rd.; 1890 to

1897, Travelling Agent, Canadian Pacific Despatch; 1897 to 1900, Commercial Agent, Flint & Pere Marqette Rd., Minneapolis, Minn.; 1900 to 1904, General Agent and Assistant General Freight Agent, Pere Marquette Rd., Milwaukee, Wis.; 1904 to 1909, General Freight Agent, Minneapolis, St. Paul and Sault Ste. Marie Ry.; 1909 to Mar. 7, 1912, Freight Traffic Agent, Pere Marquette Rd.; Mar. 7, 1912, until the recent reorganization of the company as the Pere Marquette Ry., Vice President, Pere Marquette Rd., Detroit, Mich.

E. B. Skeels, formerly Resident Engineer, C.P.R., Lethbridge, Alta., after leaving there some months ago, was appointed by the United States War Department, Central District, as Assistant Superintendent of Construction at Camp Robinson, Wis., which was built entirely for artillery forces. Upon the completion of Camp Robinson, he resigned from the U.S. Government service and was appointed Superintendent of Pumping Plant Construction for Bates & Rogers Construction Co., which has the contract for building Camp Grant, Wis., one of the 16 large cantonments for the U.S. Army. This camp is being supplied by 6 artesian wells, the water from which will be pumped into a 300,000 gal. concrete reservoir by means of an air lift system. Centrifugal pumps, two stage, of various makes, some direct connected, motor driven; others driven by motor, with belt; and gasoline engine, with belt, pump the water from the concrete reservoir to a 250,000 gal. steel tank and mains, the maximum pressure being 85 lb. With the exception of one pump, the centrifugal pumps are guaranteed to pump 1,000 gal. a minute each against a 175 ft. head. It is said that Camp Grant will be enlarged so as to finally accommodate 60,000 men, instead of 40,000, as originally planned. On the completion of his work at Camp Grant, Mr. Skeels was transferred to Madisonville, a suburb of Cincinnati, Ohio, where he is now Superintendent for Bates & Rogers Construction Co. on the replacement of a stone arch bridge under the Baltimore & Ohio Rd. double track main line, east of the city. He also had charge of a track connection between the Baltimore & Ohio Rd. and the Cincinnati Hamilton & Dayton Ry., at Dayton, Ohio., involving approximately 2½ miles of grading and 5,000 lin. ft. of trestle and bridge work. He will probably be at Madisonville all winter.

J. W. Mulhern, whose appointment as General Superintendent, Kettle Valley Ry., Penticton, B.C., was announced in a recent issue, and whose portrait appears in this issue, was born at Naples, Ill., in 1863, and entered railway service in 1881, since when he has been, to 1887, successively water carrier, track hand, freight trucker, freight clerk, brakeman and freight and passenger conductor, Chicago, Burlington & Quincy Rd., Beardstown, Ill.; 1887, Yardmaster, same road, Beardstown, Ill.; Oct., 1887, to Jan., 1890, Yardmaster, Kansas City Terminals, same road; Jan., 1890, to Dec., 1902, Trainmaster, same road, Brookfield, Mo.; Dec., 1902, to Aug., 1904, Superintendent, Kansas City Terminals, same road; Aug., 1904, to Dec., 1905, Superintendent, Hannibal-St. Louis Division, same road, Hannibal, Mo.; Dec., 1905, to July, 1908, Superintendent, Galesburg Division, same road, Galesburg, Ill.; July, 1908, to May, 1910, Superintendent, Illinois Lines, Chicago & Alton Rd., Bloomington, Ill.; May, 1910, to May, 1911, Assistant to Second Vice President, Western Pacific Ry., San Francisco, Cal.; May, 1911, to Aug., 1912, General Superintendent, Utah Line, Denver & Rio Grande Rd., Salt Lake City, Utah; Nov., 1912, to July, 1914, Superintendent, Chicago-Petoskey Division, Pere Marquette Rd., Grand Rapids, Mich.; July, 1914, to Mar., 1917, Superintendent, Northern Division, Chicago Great Western Ry., St. Paul, Minn. He was in charge of the C.B. & Q.R. terminals at Kansas City, Mo., during the flood of 1903, and had charge of all the company's trains in and out of St. Louis, Mo., during the World's Fair of 1904. While at Galesburg, Ill., he had charge of the building of the C.B. & Q.R. new hump yards there, and of the heavy grade reduction and realignment of that division. While with the Chicago & Alton Rd., at Bloomington, Ill., he completed the heavy grade reduction in the second main track to Carlinville, on the Illinois Lines, and on going to the Western Pacific Ry., he took



J. W. Mulhern,
General Superintendent, Kettle Valley Railway

over the road from the construction department, completed the construction and organized the line for operation, together with its marine service, putting it into operation Aug. 22, 1910.

Grand Trunk Pacific Ry. Inspection.—A. W. Smithers, Chairman of the G.T.R. and G.T.P.R. boards of directors, and the party of directors and officers of the G.T.P.R., which accompanied him on his recent trip of inspection, reached Vancouver from Prince Rupert, Oct. 8, and travelled eastward, visiting points not touched on the westward trip. The party arirved at Winnipeg, Oct. 12, and Montreal, Oct. 14.

Suit for Recovery of Rails.—The Grand Trunk Pacific Ry. has entered suit against M. Gordon to recover 1,590 ft. of 80 lb. steel rails, together with the angle bars and bolts belonging thereto, now lying in the Canadian Northern Ry. yards in Vancouver. Gordon purchased certain effects of Foley, Welch & Stewart at Tete Jaune and it is alleged that in addition to these he removed the rails and bolts claimed by the G.T.P.R.

The Wabash Railway in Canada.

The agreement under which the Wabash Ry. operates over the G.T.R. Air Line Division will expire Jan. 24, 1919. This covers the G. T. R. line and ferries from Detroit, Mich., to Black Rock, N.Y., and the line from Welland Jct. to Suspension Bridge, Ont., which are used under a joint operating agreement. The rental provided for was $275,000 a year for the five years ended Mar. 1, 1903; $300,000 a year for the five years ended Mar. 1, 1908; $325,000 a year for the five years ended Mar. 1, 1913; and $350,000 a year for the remaining period of the lease. The Wabash has also to pay its proportionate share of the cost of maintenance and operation. This a report says is calculated on a wheelage basis, representing 70% of the traffic and works out at approximately $100,000 a month. The Wabash does a local, as well as a through, freight and passenger business over the route, the G. T. R. only operating a few local trains mainly in connection with the branch lines, connecting with the main G. T. R. system.

One press report states that the Wabash will, on the expiration of the lease, abandon the Canadian field, and make a contract for its U. S. business with another U. S. company, while another report states that the Wabash will buy the Air Line from the G.T.R. and become an owning as well as an operating railway in Canada.

We are officially advised in regard to the foregoing that negotiations respecting a renewal of the lease are pending.

Military Railway Platforms of Old Ties.

Material of all sorts is so scarce now in France that the engineers laying out the various railways behind the lines experience difficulty in getting material for the platforms on which men and equipment—mainly the latter—are landed. These platforms have to be close to the railway track and about as high as the distance of the floor of the car from the ground. A solution of the difficulty has been found in the utilization of old railday ties. Two forms of platforms are in use. One is built between two lines of track, where an earth fill is retained between walls made up of ties. The other is alongside of one track, where the platform fill is retained by a row of ties held back to deadmen. In the double wall type a trench is excavated and ties set in the hole thus made are held tight by tamping in earth around them. Along the top of the ties then run falling pieces tied across the filled area with iron rods. In the single row type the ties are likewise set in excavation and sticks driven back of the face form deadmen to which occasional tie rods from the upper part of the ties are fastened. The fill is then made up to the level of the tops of the ties. It is found easier to excavate holes for the ties and fill in afterward than to attempt to drive them as piles.

The Canadian Northern Ry. is seeking to recover through a Saskatchewan court a sum approximating $4,000 from Judge Ousley, J. E. Chisholm, K.C., and J. Thompson, an alleged overcharge. The three defendants were arbitrators in the matter of Green against the company, and the company alleges that there has been an overcharge of the amount named in the fees charged and expenses incurred in the hearing.

Some Present Day Problems in Railway Maintenance Work.

The paper on this subject by F. B. Tapuey, Assistant Engineer of Maintenance, Canadian Government Railways, Moncton, N.B., as read before the Canadian Railway Club in Montreal, and published in Canadian Railway and Marine World for October, was discussed by the club members at some length. The following are the most important parts of the discussion:

G. E. Smart (President), Master Car Builder, Canadian Government Railways: There is room for improvement in track work. My own experience has not been great—in fact, all I know is from the work I had when in charge of a wrecking crew. Usually the first thing was to find where the car was derailed, then with the resident engineer or roadmaster find the cause. The cost of ties is very high. I was talking to a section foreman the other day and he referred back 15 or 20 years, when ties could be purchased for from 15c to 20c each whereas now they cost 75c. When you consider this you begin to realize that it is time we looked around for something that will prolong the life of the tie. I do not know that we have gone into this very extensively in this country, but there are sections in which they are using treated ties and find them an improvement and cheaper, notwithstanding the additional cost of treating the tie.

We must provide proper facilities for housing men if we are going to keep them together. The time has passed when you can pick out an old box car with leaky roof and decayed sills and turn it over to the track department for the use of their men. Mr. Tapley speaks about the use of motors on the sectionmen's cars. I know of cases where the men have purchased the motors and applied them themselves at their own expense.

R. M. Hannaford, Assistant Chief Engineer, Montreal Tramways Co.: There is one thing in the paper that I cannot understand, and that is the stress which is laid on the use of the treated tie. The treatment does not lengthen the life of such a tie as the cedar tie but it will lengthen the life of ties from other woods more susceptible to rot. The trouble with the cedar tie is that it not only rots, but it will split and break down under rail. The best thing to make the tie last is to use a tie plate, which is a step forward, as the proper use of tie plates will increase the life of the ties. In regard to the labor trouble; I think the main trouble is to keep the men on the regular sections and not so much on the extra gangs. The life of the regular sectionman is rather dull and the work is hard, and after working hard all week if he is sent up the line 20 or 30 miles on some work of emergency on Sundays—which happens from time to time—in one of these cases that the President spoke of—he is apt to become dissatisfied. The track is one of the hottest places on which a man can work, and the work is somewhat dispiriting, and could be alleviated to an extent by the use of motor cars. If you start out fresh in the morning, by the time you reach the place of work and remove the tools from the hand car you feel you have done enough for a few hours at least, and it is the same thing going home. It is hard to pump against a heavy grade, or a heavy wind, and you feel like getting off and letting someone else pump the car while you walk home.

Cutting the end of rails is a good thing if you can overcome the objection of using old plates. The trouble is that the rail is liable to hammer down the plate. Sometimes you can twist it around and use it in the opposite way, but the hammering down of the following rail makes an offset in the plate so that it will not fit. The street railways use a large file in a frame, which grinds the joints, or levels them up, after the joints have been tightened.

You can get men more readily for extra gangs than for regular gangs, as the men do not like to go out into the country where life is monotonous and it gets on their nerves. They want a little recreation, which they do not get on regular sections.

In regard to the heavy work on the track, such as tamping: There are certain types of power tampers which are used and which can be used with economy in large gangs, and they also help the men as they take away a lot of the drudgery of tamping by hand.

In regard to the life of ties: The other day in speaking to a practical man, he stated that he did not consider it would pay to treat ties until they were worth 95c each, they are now 80c, so that they would soon have to begin to treat them.

I believe that too little attention has been given to the quality of ballast used. The practice has been to use any old thing that looked like gravel, and while good ballast may have to be hauled some distance it pays to apply the proper quality. On the Grand Trunk, the nearest ballast pit to Montreal, as I remember it, is River Beaudette, and I think there is another pit not far from Acton, on the line to Richmond. When you have to haul your ballast 40 miles it is going some. I believe the roads will eventually come to use broken stone ballast. It costs more to produce and to handle, but it is the cheapest in the end to use for the track.

W. H. Yost, Engineer, Hart Otis Car Co.: My experience in ballast maintenance work has been mostly in building the ballast car and seeing the work from that point of view. Many of the roads in the United States have gone into the use of washed ballast and broken stone ballast, which is more expensive, but cheapest in the end, as the poor material loosens up by reason of moisture and results in pockets in the roadbed. In Canada, where you have ballast pits at convenient points and the material is of good quality, it is cheaper to use it and it does very well, but with the heavy equipment used today good ballast is very necessary.

In regard to housing of men: I have been to some of the camps and have stayed in them. The men are housed fairly well and the food is very good. Of course, you do not want to look twice where you sleep and you probably will require to be fumigated when you leave, but that is all in the day's work.

C. W. Van Buren, General Master Car Builder, C.P.R.: We are all interested in track work. The locomotive and car men particularly know what effect certain conditions of track have on the equipment. The President made a remark about the wrecking foreman, the first thing he did was to look for a bad rail. I do not agree with him, in every case, as I knew of a wrecking foreman who reported to the maintenance of way department, and he did not find any bad rails. He found various car defects, but, of course, when he was turned over to us we got him busy looking for bad track.

I do not know just how expensive rock ballast is, but as a matter of information should like to know if it is not a fact that in the long run rock ballast is more economical, and is it not the only thing that gives automatic drainage and a good, clean roadbed? It might be interesting to hear about that.

Another thing is the process for rerolling worn rails. Some officers have been hauled over the coals about grinding cast iron wheels and reclaiming them, and they have had to explain at length why this should not be done in Canada. If it is profitable to reroll rails it is something which we should look into, but I would like to have some information as to whether the rerolled rail is as safe as the new rail, as it comes from the mill. This is a very serious question, as we all know the troubles we have had in this country during the winter with broken rails.

We can understand that a tie plate will assist in preserving the tie and probably save considerable trouble and expense in track maintenance, but the tie plate is only a little wider than the base of the rail, and I would like to know why it would not be better to make the plate wider.

Jas. Powell (Secretary): I understand the C. P. R. has a machine for regrinding wheels.

C. W. VanBuren: It has none, and it is not likely that it will have any.

Jas. Powell: You regrind the wheel to make it serviceable for a little longer, but in the case of the rail, if it is rerolled it will never be like the new rail. On the English roads they have a chair which holds the rail much firmer than the tie plate which we use in this country. I would like to ask something about the ditching machine. It seems to me it would be very helpful in maintaining the track, especially in the spring after heavy snow when the water accumulates, and if there is no means of carrying it away the ties become loose.

C. W. Van Buren: I think Mr. Tapley's idea of the ditching machine is something like the man who wanted to hire a janitor. He asked the man who applied if he had ever been in jail, and he said "No." He then asked him if he ever used intoxicating liquor, and he said, "You don't want a janitor; what you want is an angel." Mr. Tapley knows what he wants, but I do not think it has been discovered yet.

F. B. Tapley: We have a machine built like a small steam shovel. Several types are made. These machines will ditch or clean out a cut, but they will not finish it. The machine I have in mind is a ditch cleaner with a bucket belt which will cut a ditch of standard section or clean the ditch out the same as a man would do with a shovel. When the man cleans it out with a shovel, he put the earth on the side of the ditch and in a few weeks it is washed back again. If we could take this material, and by using a belt conveyor and dump cart, put it down the side of a dump, it would take this work off the sectionman. I have only just a crude idea. I have seen trench excavators, and they are mighty good machines.

A Member: How long would the arm have to be to carry that?

F. B. Tapley: Say 12 ft. on the average. We should keep the centre of the ditch 11 ft. from the centre of the track, or a little farther, depending on the depth and width of the ditch. My idea is to have it so that it would elevate the material from the ditch on one side and then turn

round and work on the other side. The man in charge could watch it to see that it did not cut too deep. It is a hard job to grade a ditch and any practical trackman will tell you that. If we could get something like that and get it working, it would save time and money.

R. M. Hannaford: I think you should have the arm at least 15 ft., because the average railway embankment being 14 ft. that would give you 7 ft. You have got a bank of 2 ft., then a very small bank with a slope of 1½ to 1, which gives 3 ft. more. You have also to allow 4 ft. for the ditch, so that you have got at least 15 ft. and that is with only a single track. I think something is needed for ditching the cuts a great deal more than the fills, as the fills will take care of themselves. I also think that rock ballast with a sloping subgrade would obviate a great deal of the trouble.

F. B. Tapley: The Lehigh Valley, when it built a portion of its line, used a roller to roll the subgrade, and never surfaced the track for two years afterwards. It had a solid subgrade that was firm enough to take the water away without soaking into it.

A Member: That was specially prepared?

F. B. Tapley: Yes, it was tried as an experiment.

A Member: It would be very expensive.

F. B. Tapley: No, not when you rent a roller for $10 a day and consider how much work you can do with it.

A. Bromley-Smith, Asst. Engineer, C. P. R.: I think that from an engineer's point of view, the greatest difficulty at present is to obtain material. Mr. Tapley states his preference for a plate with a smooth bottom. A tie plate should be large enough to eliminate cutting into the ties and thus destroying them by mechanical wear, and the base should be of such a character as not to accelerate rotting by cutting the fibre of the wood and so permitting water to enter. One of our roads is using a 8½ x 6½ in. shoulder plate with the rail seat canted 1 in 20 and having a corrugated base, under 85 lb. rail, with very satisfactory results.

The question of treating ties is one which comes up periodically and is a matter of economics. There is only one creosoting plant in Canada at present, and the available supply of creosote is probably not sufficient to justify the railway companies adopting this method of prolonging the life of ties to any large extent just now.

Mr. Tapley referred to rerolling rails. A considerable tonnage of rails has been rerolled into rails of lighter and modified section during the past few years in the United States, but the practice has not yet reached a stage where the railways can make use of it to a very large extent. After rail has been in service for some time, a large number of minute cracks develop in the running surface, and the use of rerolled rail must be extended with caution until experience shows the reliability to be placed upon it. Before being rerolled, rails are sorted according to the extent they are worn, then heated and run through rolls which increase their length, and reduce the section of the head. The process is patented, and no Canadian firms are handling it at present.

Better standardization of track fastenings is certainly desirable, a move in that direction was made this year, and, I believe, we shall shortly see a considerable reduction in the number of types of rail and fastenings being ordered by the various railways.

E. A. Cunningham, Vice President's Office, C.P.R.: About 15 years ago I visited a plant on the Great Northern at Somersmont, where they creosoted ties; they took every class, jack pine, fir, spruce, etc.; they used every sort of local grown timber, and seemed to think they got excellent results. At that time they were also using a three-cornered tie with 12 in. face known as the "Jim Hill self-tamping tie." I mention this in passing so that if any member desires to get some statistics on treated ties he might do so by communicating with the Great Northern as the time which has elapsed must have proven many things.

A. Bromley-Smith: The practice in Europe, where creosoting has been carried on for many years, is to force as much creosote as possible into the ties, and, I think, a life of only 12 years, for ties so treated, would be considered very disappointing. In this country, the tendency at first was to restrict the amount of preservative used, but I consider ties should be treated under the pressure process, and given a full injection of creosote.

F. B. Tapley: We have had some experience with the use of creosoted piles used in salt water. I think the process was the same as described by Mr. Smith. These piles have been in service nearly 30 years, in salt water, and they are as good above as they are below water, but unfortunately we have no records to show just how they were treated.

R. M. Hannaford: The piles under the G. T. R.'s Galt wharf at Portland, Me., were renewed in creosote about 26 years ago. I know the piles there were eaten away by a small worm known as the Limnoria. Before these piles were renewed they were eaten down in some places to 3 in., but after the creosoted piles were put in there was no sign of them being attacked by this worm.

G. T. Bell, Passenger Traffic Manager, G.T.R.: What is the relative proportion of the cost of maintenance that should be charged against passenger and freight trains?

F. B. Tapley: The only way I could answer that would be by taking the amount of passenger and freight tonnage handled. From my own experience I should say the passenger equipment is not so hard on the track as freight equipment.

G. T. Bell: Based on train mileage, with modern passenger and freight trains, what is your idea as to division of the expense?

F. B. Tapley: The cost is about two-thirds in favor of freight and one-third in favor of passenger.

Experiments with Storage of Bituminous Coal.

A series of experiments, started in 1910, to determine the effects of storage upon the properties of bituminous coal has recently been completed by the University of Illinois Engineering Experiment Station. The object has been to devise methods of storing which will avoid the risk of spontaneous combustion and to determine the extent to which coal deteriorates in storage. Prof. S. W. Parr, under whose direction the tests have been conducted, summarizes the results in Bulletin 97 of the Engineering Experiment Station. It is shown that, if properly sized and carefully handled, coal may be stored without danger of spontaneous combustion; that the actual loss of heat value, or deterioration, resulting from storage is slight; and that underwater storage eliminates entirely all risk of spontaneous combustion or of deterioration. The extent of the waste and economic loss incident to the present method of seasonal production, with its attendant abnormal demands upon transportation facilities is discussed, and it is estimated that the lack of storage facilities in large distributing centres necessitates a capital investment in mines and railway cars of $500,000,000 in excess of the amount which would be required if production could be maintained at a uniform rate throughout the year. Copies of the bulletin may be had without charge by addressing C. R. Richards, Director Engineering Experiment Station, University of Illinois, Urbana, Illinois.

German Plot to Destroy Canadian Pacific Railway.

The United States Secretary of State made public on Oct. 10 two cablegrams sent by the German Foreign Office in Jan. 1916 to Count Bernstorff, German Ambassador at Washington, as follows:

"Jan. 3. Secret. General staff desires energetic action in regard to proposed destruction of Canadian Pacific Railway at several points, with a view to complete and protracted interruption of traffic. Capt. Boehm, who is known on your side and is shortly returning, has been given instructions. Inform the Military Attache and provide the necessary funds.

(Signed) "Zimmermann."

"Jan. 26. For Military Attache. You can obtain particulars as to persons suitable for carrying on sabotage in the United States and Canada from the following persons: 1, Joseph MacGarrity, Philadelphia, Pa.; 2, John P. Keating, Michigan Avenue, Chicago; 3, Jeremiah O'Leary, 16 Park Row, New York. One and two are absolutely reliable and discreet. Number three is reliable, but not always discreet. These persons were indicated by Sir Roger Casement. In the United States sabotage can be carried out on every kind of factory for supplying munitions of war. Railway embankments and bridges must not be touched. Embassy must in no circumstances be compromised. Similar precautions must be taken in regard to Irish pro-German propaganda. "(Signed)

"Representative of General Staff."

Quebec's Interest in Canadian Northern Ry.—The Quebec City Council has instructed the City Attorney to attend before the board of arbitration which will fix the value of C.N.R. common stock to be taken over by the Dominion Government, in order to protect the city's interests. It was stated at the council meeting that the city has interests valued at $420,500 in the railway.

Coupler Repairs.—One of the larger U.S. railways undertook an investigation recently into the question of repairs to car couplers, with the result that, for 1916, it was shown that the expense per car per year was $197. The rate of coupler renewals was 0.14 coupler per year, thus showing the average service life of a coupler to be between seven and eight years.

The Canuck Supply Co., Ltd., Montreal, has made the following appointments: E. L. Foley, Eastern Sales Manager, with headquarters at Ottawa; W. J. Espey, Manager of Toronto Branch; J. T. Dohm, heretofore Manager, Toronto Branch, has been appointed Manager of Winnipeg Branch, in charge of territory west of Fort William.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Burrard Inlet Tunnel & Bridge Co.—Local interests in North Vancouver are organizing to bring pressure to bear on the directors of the company, who are representatives of the municipal councils, to apply to the Dominion Parliament for a further renewal of the company's charter, and not to permit it to lapse, as was suggested at the recent annual meeting of shareholders. Public meetings are being arranged for to discuss the whole matter. The Vancouver City Council finance committee was instructed, Oct. 5, to take the matter into consideration. (Oct., pg. 393.)

The Canadian Northern Ry. is applying to the Dominion Minister of Public Works to approve of site and plans of a bridge across the Assiniboine River at Kamsack, Sask., mileage 279.3 on its main line.

Canadian Pacific Ry.—The new locomotive house at the Bay Shore terminal, St. John, N.B., is reported to be practically completed. The heating plant has been put in and the installation of the lighting plant is reported to be in progress. A new water tank in the yard and an extension to the coal trestle at Bay Shore are being built, Grant & Howe being the contractors.

A press report from Lethbridge, Alta., states that it is understood that the building of the gap between the east and west terminals of the Weyburn-Lethbridge line will be undertaken next year. The present westerly terminus is at Altawan, the boundary between Saskatchewan and Alberta, and the present easterly terminus is at Manyberries, Alta., the distance between these two points being 37.9 miles.

A press report states that plans are under consideration for the erection of a new station at Lethbridge, Alta., and that its site will be about the same location as that occupied by the existing icehouse, on First Ave. South, opposite Galt Gardens. Another report states that the plans for the new station are being considered in conjunction with plans for the enlargement and rearrangement of the present station.

A press report states that the company has under consideration plans for the construction of a pier at Victoria, B.C., to cost about $1,000,000. (Oct., pg. 387.)

Edmonton, Dunvegan & British Columbia Ry.—J. D. McArthur, President, is reported to have said in Winnipeg, Oct. 5, that there was not the slightest foundation for the report that negotiations were in progress with the C.P.R. for the sale of the E.D. & B.C.R. and its two allied lines. He had just completed a trip of inspection over the lines and found everything satisfactory. No plans had been definitely settled for construction in 1918.

At the Edmonton, Alta., City Council meeting, Oct. 9, a letter was read from W. R. Smith, the company's Chief Engineer, asking permission to lay tracks and operate trains between what is known on the old maps as Plante Ave., south as far as the intersection of the Canadian Northern Ry. tracks between old Stephen and Trethewey Aves., and on McKenzie Ave. between 121st St. and 105th St. The letter said: We are prepared to comply with the necessary procedure in applying to the Board of Railway Commissioners for approval. In applying for this I would point out to you that on 121st St. there are already existing tracks, and sufficient width has been added to the street south of old Alberta Ave. to permit of another line of tracks down this street without any damage to property. I understand there are certain existing agreements with regard to McKenzie Ave. of long standing and we would be prepared to accept a narrow strip on the southern portion of the street, complying with the requirements of the Board of Railway Commissioners in the construction of the line." The matter was referred to the City Commissioners for consideration. This is the first definite move made by the company towards the location of its terminals in the centre of the city. (Oct., pg. 392.)

Essex Terminal Ry.—A press report states that a contract has been let to the Chick Construction Co., Windsor, Ont., for the extension of the line from Ojibway to near Amherstburg, where the Brunner Mond Co. is building a large charcoal plant. An earlier press report stated that the extension was to be seven miles in length along the first concession in Sandwich West to Amherstburg. (Sept., pg. 350.)

Grand Trunk Pacific Ry.—A press report states that the company is expending $20,000 on bridge construction in the vicinity of Prince George, B.C. (Sept., pg. 350.)

Grand Trunk Ry.—W. D. Robb, Vice President in charge of rolling stock, etc., was in Brockville, Ont., Oct. 4, and is reported to have said that nothing would be done in regard to the proposal to remove the company's shops from Brockville to Prescott until next spring, at least, and that it was not all likely that anything would be done until after the war. (Oct., pg. 393.)

Great Northern Ry.—Traffic on the company's line into Vancouver was held up recently owing to the sinking of 350 ft. of track east of Ardley. There is a big sink hole at this place which has given considerable trouble since the line was built. A temporary line has been built so that traffic may be carried on and a large gang of men is endeavoring to fill the hole permanently. (Sept., pg. 350.)

Greater Winnipeg Water District.—At a meeting of the Greater Winnipeg Water District Commissioners recently the auditor reported that the expenditure upon construction to June 30 was $7,682,335, of which $1,601,928 had been expended upon railway construction, equipment and rolling stock.

Hudson Bay Ry.—We are officially advised that the state of construction on the closing down of work for the season was as follows: The grading of the entire line from Pas to Port Nelson was completed in September. Ballasting and train filling has been carried on to mile 332 from Pas, and the track is in good condition up to that point. The bridge over the second crossing of the Nelson River at Kettle Rapids, mileage 332, is in course of erection and is expected to be completed early in December. It is a continuous truss 1,000 ft. long, with 2 shore spans of 300 ft. each, and a river span of 400 ft. It is being erected on the cantilever method by the Canadian Bridge Co., Walkerville, Ont., from the designs of W. Chase Thompson, M.Can.Soc.C.E., Montreal. A temporary trestle has been erected over the Limestone River, mileage 350. No buildings were commenced at division yards during the season. The work remaining to be done consists of a trestle bridge across the Kisematchisk River, mileage 395, and 92 miles of tracklaying, ballasting, etc.

It is reported that good progress has been made with the terminal work at Port Nelson. G. H. Roy, with a party of 70 men, reached Halifax, N.S., Oct. 5, from Port Nelson. The remainder of the men employed worked to the Kettle Rapids of the Nelson River and went out to Winnipeg by rail. (Oct., pg. 303.)

Intercolonial Ry.—Tenders are under consideration for building frame stations at Thorburn and Valley, N.S., a locomotive house at Thorburn and an ice house of 1,500 tons capacity at Mulgrave, N.S.

Owing to the extreme high tides in the Bay of Fundy and Petitcodiac River, on Oct. 1—the highest experienced since 1869—considerable portions of the roadbed were washed out, necessitating the suspension of traffic between Halifax and Moncton for some days. The damage was considerable between Moncton and Grindstone Island, 30 miles, and from Daniels Flat to Germantone Lake, 15 miles, the most serious damage being done between Aulac and Sackville, where half a mile of track was washed out, while other serious washouts occurred near Dorchester and Upper Dorchester. Temporary repairs were made to enable traffic to be resumed. (Oct., pg. 393.)

Kettle Valley Lines.—We are officially advised that the company has decided to build a branch line from Princeton to Copper Mountain, B.C., about 13 or 14 miles. The location is in charge of A. McCulloch, Chief Engineer, Penticton, B.C. This construction is in conjunction with a large mining proposition of the Canada Copper Corporation, which was reported, Oct. 15, to have placed an issue of $2,000,000 of bonds in New York. This bond issue will provide for further development of the mining property and the building of a concentration plant. The Kootenay Power Co. is reported to be about to expend $1,000,000 in extending its power lines to the mining plant. (Sept., 1916, pg. 364.)

Northern New Brunswick & Seaboard Ry.—See St. John & Quebec Ry.

Pacific Great Eastern Ry.—Following are extracts from the directors' report presented at the annual meeting in Victoria, B.C., recently: "You have been fortunate in obtaining a disinterested expert report upon the location and construction of the railway by two eminent engineers at the head of their profession in Canada, who, after a close inspection of the whole line, affirm that the location is the best that could have been secured; that the construction is of the highest standard desired, and that the work has been honestly and economically carried out. You will be gratified at this justification of the confidence reposed by your directors in the ability and integrity of your Chief Engineer. Paralyzed by the effects of the war and further embarrassed by the ill timed action of the B.C. Government in bringing suit against your sponsors and directors for their failure to complete this contract, of which the cataclysm of war is the cause, but one course is open, which is the policy being pursued, viz., to mark time until the advent of normal conditions and the settlement of all litigious disputes."

The bridge over the Capilano River, west of North Vancouver, was carried away by a flood, Oct. 1, for the fourteenth time since the railway was opened to

Dundarave, B.C. Temporary repairs have been made and traffic was resumed within a couple of days.

The Finance Minister and the Provincial Secretary for British Columbia spent several days early in October in a trip of inspection over the P.G.E.R. to Clinton and over a section of the partially constructed line thence to Prince George. The matter of future construction is under consideration by the B.C. Government.

In Nov., 1916, the P.G.E.R. placed a contract in the U.S. for 21,000 tons of steel rails. It was stated, Oct. 17, that the B.C. Government had decided to finance this contract, in order that the increase in value of the rails may accrue to the company and so increase the value of the assets which the government is claiming under its mortgage.

Quebec Bridge.—Work on the bridge had sufficiently progressed to permit the crossing of a work train, Oct. 17. The train consisted of a locomotive and two flat cars and the passengers included C. N. Monsarratt and R. Modjeski, of the Bridge Commission, and G. F. Porter, construction engineer for the contractors. It is expected that everything will be ready for the running of freight trains over the bridge by the middle of November, and that the official opening for regular traffic will take place next spring. (Oct., pg. 400.)

St. John & Quebec Ry.—In addition to providing for an extension of time for building the Gagetown-Westfield section o fthe line, the New Brunswick Legislature passed an act last session providing for the removal of the Northern New Brunswick & Seaboard Ry. tracks and their use on the Gagetown-Westfield section of the S.J. & Q.R. The government may pay for the rails in cash or make other arrangements for compensating the N.N.B. & S.R.

The N.N.B. & S.R. is a mineral carrying railway, built in 1911 by the Canada Iron Corporation from Nipisiguit Jct., on the Intercolonial Ry., to the company's iron mines, 16.9 miles. The mines and railway have not been operated for some two or three years. The present owner of the property is Canada Iron Foundries, Ltd. (Oct., pg. 394.)

Toronto, Hamilton & Buffalo Ry.—We are officially advised that the yard extension work projected at Hamilton is a 4-track addition, each track to accommodate 70 cars, at the present Kinnear yard, 1.75 miles east of Hamilton station. The company already owns part of the mountain face, and the clearing and grubbing performed on that piece of property started some opposition. A request was made to the city to sell a portion of the mountain face adjoining, which was necessary for the accommodation of the trackage, but the company was informed that owing to the opposition which had developed the request would in all probability be refused.

The company is applying to the Board of Railway Commissioners for an order to expropriate a piece of property on the mountain side to the east of Gage Ave., Hamilton belonging to the city. City officials state that the only object which the company could have for acquiring property in this vicinity is for the extension of the Kinnear yard.

In connection with this work the Hamilton City Council has protested on the ground that its being carried out would interfere with the Tye-Cauchon plan for dealing with the whole railway situation in Hamilton, which has been approved by the city couuncil. The council desires to have the work near Gage Ave. suspended until the Tye-Cauchon plan has been fully considered by all parties concerned. (Sept., pg. 351.)

Union Station for Victoria, B.C.—A press report states that plans are being prepared for the erection of a union station at the Kitsilano Indian Reserve, Victoria, for use by the C.P.R.'s subsidiary, the Esquimalt & Nanaimo Ry., and the Canadian Northern Ry., and that the estimated cost of the building is put at $1,000,000.

United States Railroad War Board's Report on Traffic Conditions.

The U.S. Railroad War Board issued the following statement recently: Reports just compiled for the board indicate that the travelling public in general and the shippers in particular are giving the finest kind of co-operation to the railways in the handling of the increased traffic that the war has produced. What this co-operation means may be gleaned from these facts: Since May 1 the railways, aided by the loyalty and understanding of the public, have been able to reduce their passenger service by approximately 25,000,000 miles. This has released thousands of train crews and locomotives for use in the freight service and cleared thousands of miles of track, thereby facilitating the movement of coal, food products, and supplies needed by the government.

In addition to the foregoing saving of equipment and trackage, the shippers, big and small, have rallied so splendidly to the slogan, "Make one car do the work of two," that a saving of close to half a million freight cars has been accomplished. This saving of freight cars has enabled the railways to move approximately 25% more freight since war was declared than during the same period last year. Intensive loading and a general increase in the size of the "trade units" used by the various industries has rendered possible the saving of car space. Cotton, for instance, which was formerly moved in units of 50 bales, now moves only in units of 65 and 75. As there are 18,000,000 bales to be moved by rail each season, the increase in the trade unit in this one commodity alone has produced a saving of anywhere from 83,000 to 125,000 cars. Sugar, on which the carload minimum from the South was formerly only 24,000 lb. a car, now moves only on a 60,000 carload minimum. The producers of manufactured food and products, especially the canners, have also come to a realization of the value of intensive loading, and are now loading virtually all of their cars to capacity.

Coal, which has been loaded beyond capacity on most lines since the beginning of the war, is also moving freely now, although labor trouble in some parts of the country is tending to counteract the efforts of the railways to meet the abnormal demnad for fuel. During the past month the supply of cars on the "lake coal" lines has been increased 25% and there has been some increase in the movement of bituminous coal to the lake ports, but it has not been proportionate to the increased supply of cars, as labor trouble has tended to decrease the mine production.

Although excellent results have been achieved to date through the co-operation of the shippers, the travelling public, and the railways it will be necessary for all concerned to exert renewed efforts, as the abnormal demands upon the railways in the movement of both troops and supplies is constantly increasing, while the securing of new equipment is virtually impossible. From now on, 2,500 cars a day will be required by the government to move food and supplies to the men in training at the National Army, National Guard, and other encampments, while the demand of the allies for cars to carry export goods to the seaports will be practically doubled. All of this additional traffic must be moved by the railways, although they have only 3% more equipment than they had at this time last year.

Gross Railway Earnings June 1 to Sept 30.

	1917.	1916.	1915.
C.P.R.	$107,168,000	$97,753,000	$67,081,000
C.N.R.	29,815,200	26,780,400	16,063,200
G.T.R.	49,307,934	47,040,020	36,901,794
	$186,291,134	$171,573,420	$120,045,994

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from July 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Decrease
July	$3,844,900	$2,940,000	$ 904,900	$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
	$7,250,100	$5,752,000	$1,498,100	$ 771,300
Incr	.....	$ 502,300	.....	.....
Decr	$ 269,000	.....	$ 771,300	.....

Approximate earnings for September, $3,341,700, and for three weeks ended Oct. 21, $2,591,200, against $3,187.900 for September, and $2,544,800 for three weeks ended Oct. 21, 1916.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1916, from Jan. 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
Jan.	10,158,307.86	7,726,829.36	2,431,478.50	341,070.27
Feb.	9,084'276.76	7,098,227.96	1,986,048.80	x308,293.94
Mar.	11,846,542.98	7,909,225.16	3,937,317.82	516,987.46
Apr.	12,355,519,60	8,180,541,98	4,174,979,62	441,241,66
May.	14,355,149.63	9,803,426.84	4,551,719.79	179,436.88
June	13,556,979.69	9,641,073.49	3,915,906.20	226,273.09
July	13,377,850.55	9,617,853.33	3,760,007.22	x257,084.51
Aug	12,414,537.25	8,596,998.76	3,817,538.49	x1,650,248.36
	$97,149,174.32	$68,574,179.88	$28,574,994.44	x$ 511,617.46
Inc.	$ 8,619,544.72	$ 9,131,162.18	x$ 511,617.46	.....

x Decrease.

Approximate earnings for September $11,952,000, and for three weeks ended Oct. 21, $9,604,000, against $11,846,000 for September, and $8,932,000 for three weeks ended Oct. 21, 1916.

Grand Trunk Railway Earnings.

Aggregate traffic receipts from Jan. 1 to Sept. 30:—

	1917.	1916.	Increase.
G. T. R.	$38,689,686	$34,506,112	$4,183,574
G. T. W. R.	7,158,848	7,013,803	145,045
D.G.H. & M.R.	2,493,513	2,486,612	6,901
Totals . .	$48,342,047	$44,006,527	$4,335,520

Aggregate earnings for September, $5,783,792, and for three weeks ended Oct. 21, $3,908,859, against $5,636,826 for September, and $3,819,229 for three weeks ended Oct. 21, 1916.

Grand Trunk Pacific Ry. Earnings.

The approximate earnings for the Prairie Section, 916 miles, for September were $538,545 against $362,849 for Sept. 1916, and the aggregate earnings for three months ended Sept. 30, were $1,515,374 against $1,056,605 for same period 1916.

The Interstate Commerce Commission, on Oct. 22. ordered reopened the 15% rate advance case for eastern carriers, and fixed the first hearing for Nov. 5 at Washington.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

26558. Sept. 19.—Authorizing Canadian Northern Ry. to build extension to spur for Western Coal Co., Fort Rouge, Man.

26559. Sept. 22.—Authorizing G.T.R. to take additional lands for additional trackage and terminal facilities at Fort Erie and Bridgeburg, Ont., and at Canadian approaches to International bridge.

25560. Sept. 24.—Authorizing G.T.R. to operate over C.P.R. sidings to Reliance Moulding Co., and Frontenac Floor and Wall Tile Co., Kingston, Ont.

26561. Sept. 24.—Authorizing G.T.R. to build spur for Davis Leather Co., Newmarket, Ont.

26562. Sept. 24.—Authorizing C.P.R. to build spur for Ford Motor Co. of Canada, Winnipeg.

26563. Sept. 20.—Ordering C.P.R. to build spur for George Webb, Toronto.

26564. Sept. 24.—Ordering G.T.R., within 60 days, to install bell at crossing immediately west of Tillsonburg station, Ont.; 20% of cost to be paid out of railway grade crossing fund.

26565. Sept. 24.—Ordering Algoma Eastern Ry. by June 1, 1918, to fence right of way on east side of track, mileage 51.5 to 52.5, Merritt Tp., Ont.

26566. Sept. 24.—Extending to June, 1918, time within which City of Fort William, Ont., shall install half interlocking plants at crossing of Canadian Northern Ry. by Fort William Electric Ry. at Victoria Ave., and at Franklin St.; conductors to flag cars over crossings.

26567. Sept. 24.—Authorizing New York Central Rd. to rebuild bridge 43A near Northfield Station, Ont.; and rescinding order 26163, May 29.

26568. Sept. 25.—Authorizing Saskatchewan Government to build highway crossing over C.P.R. station grounds at Lafleche; C.P.R. to maintain crossing, within limits of right of way, and Village of Lafleche to close and convey to C.P.R. part of old road which is within limits of its right of way.

26569. Sept. 25.—Authorizing Canadian Northern Ry. to build spur for Beaver Lumber Co., North Battleford, Sask.

26570. Sept. 24.—Authorizing C.P.R. to build spur for National Portland Cement Co., Bentinck Tp., Ont.

26571. Sept. 25.—Authorizing Quebec Ry. Light & Power Co., and C.P.R. to operate over crossing at St. Valier St., Quebec, Que., C.P.R. trains not to exceed 15 miles, and electric cars 10 miles an hour.

26572. Sept. 26.—Approving Edmonton, Dunvegan and British Columbia Ry. plan of station to be built at Donnelly, Alta.

26573. Sept. 26.—Relieving G.T.R. from providing further protection at St. Remi St., Montreal.

26574. Sept. 27.—Approving plan and profile filed by Bowness Improvement Co., showing drainage of Bowness subway under C.P.R. in Secs. 34 and 35, Tp. 24, Range 2, west 5th meridian, Alta.

26575. Sept. 27.—Authorizing G.T.R. to build spur for Standard Paving Co Dumfries North Tp., Ont.

26576. Sept. 26.—Extending to Nov. 30, time within which Canadian Northern Ry. shall erect fourth class station at Fairmount, Sask., as required by order 26458.

26577. Sept. 26.—Authorizing The Gap, no. 39, rural municipality, Sask., to make highway over Canadian Northern Ry. at mileage 24.5, on blind line between Secs. 15 and 22, Tp. 6, Range 21, west 2nd meridian.

26578. Sept. 26.—Ordering Canadian Northern Ry. to file proposed joint tariff on canned goods, in carloads, to become effective by Nov. 1; railway companies made parties to same to file concurrences by Nov. 1, and rescinding order 26168, May 31.

26579. Sept. 26.—Approving plan and specifications of work on Kaufman drain under G.T.R. in Harwich Tp., Ont.

26580. Sept. 27.—Ordering Edmonton, Dunvegan & British Columbia Ry. to fence right of way between mileage 235 and 240, by June 1, 1918.

26581. Sept. 27.—Amending order 22451, Aug. 27, 1914, re Erie & Ottawa Ry. (T., H. & B. R.) branch to Michigan Central Rd., in Moncton Tp., Ont.

26582. Sept. 27.—Amending order 26506, Sept. 7, re Esquimalt and Nanaimo Ry. spur for Foundation Co., on Songhees Indian Reserve, Victoria, B.C.

26583. Sept. 28.—Relieving C.P.R. from providing further protection at highway west of Elfros station, Sask.

26584. Sept. 28.—Authorizing Dominion Government to make highway crossing over C.P.R. on line between Sec. 7, Tp. 26, Range 11, and Sec. 12, Tp. 26, Range 12, west 5th meridian, Alta.

26585. Oct. 1.—Authorizing C.P.R. to close station at Ypres, Ont.

26586. Oct. 1.—Amending order 26464, Aug. 21, 1914, re Calgary Power Co., Calgary, Alta.

26587. Oct. 1.—Ordering G. T. R. to restrict speed of northbound trains over highway crossing at Port Colborne, Ont., to 10 miles an hour.

26588. Oct. 1.—Extending for three months from date time within which Canadian Northern Ry. shall complete spur at North Battleford, Sask., as authorized by order 18549, Jan. 18, 1913.

26589. Sept. 29.—Approving Edmonton, Dunvegan & British Columbia Ry. standard freight tariff, C.R.C. 62, effective Oct. 1,

26590. Oct. 2.—Ordering C.P.R. within 60 days to install bell at highway near Buckingham Jct. station, Que., movements over crossing on siding to be flagged by train crew; 20% of cost of installation to be paid out of railway grade crossing fund.

26591. Oct. 2.—Amending order 26423, Aug. 14, re whistling by Canadian Northern Ry. locomotives at Brighton, Ont.

26592. Oct. 2.—Ordering G.T.R. to erect freight shed at Beauharnois, Que., within 30 days.

26593. Sept. 27.—Authorizing The Gap rural municipality, no. 39, to make highway over Canadian Northern Ry. at Ceylon, Sask.

26594. Oct. 1.—Authorizing Canadian Northern Ry. to build branch for Sanatorium for Consumptives at Ninette, Man.

26595. Oct. 2.—Relieving Edmonton, Dunvegan & British Columbia Ry. from fencing right of way between mileage 10.7 and 10.8, Burnt River bridge, and from erecting fences, gates and cattle guards between mileage 8 and 10.7 and 10.8 and 29, relief given in latter case to cease as soon as any land on either side becomes settled or improved.

26596. Oct. 2.—Authorizing Canadian Northern Ry. to build spur for Langstaff, Schurg & Co. at Emo, Ont.

26597. Oct. 2.—Dismissing complaint of O'Brien Bros., Chatham, Ont., that C.P.R. has erected a fence along its line at King St. East, without providing access to their property.

26598. Oct. 3.—Extending for two months from date time within which C.P.R. shall erect standard 6 station at Enterprise, Ont.

26599. Oct. 2.—Authorizing Canadian Northern Ry. to build overhead across Fairford St., Moose Jaw, Sask.

26600. Oct. 2.—Relieving C.P.R. from providing further protection at Keewatin St., Winnipeg.

26601. Oct. 3.—Authorizing C.P.R. to build spur for Merritt Collieries, Ltd., Merritt, B.C., and approving clearances.

26602. Oct. 2.—Relieving Edmonton, Dunvegan & British Columbia Ry. from erecting fences gates and cattle guards along certain portions of its right of way between mileage 130.8 and 262.2, and ordering it to fence right of way between mileage 159 and 161.8, 163.5 and 165, 192 to 194.8 and 234.7 to 240; work to be completed by June 30, 1918.

26603. Oct. 2.—Ordering C.P.R. to erect station at Mud Lake, Ont., in accordance with order 26068, May 5, and stop trains on flag there.

26604. Oct. 3.—Extending to Oct. 1, 1918, time within which Mount Royal Tunnel & Terminal Co. (C.N.R.) may operate trains over connection with Jacques Cartier Union Ry. near Jacques Cartier Jct., Que., mileage 5.01 from Dorchester St.

26605. Oct. 3.—Relieving Edmonton, Dunvegan & British Columbia Ry. from fencing right of way along certain portions between mileage 262.2 and 357.3.

26606. Oct. 4.—Relieving G.T.R. from providing further protection at Sealy St., Casselman, Ont.

26607. Oct. 3.—Extending to Dec. 31 time within which G.T.R. shall complete widening of culvert near St. Gregoire station, Que., as required by order 26375.

26608. Oct. 4.—Authorizing G.T.R. to build spur for Fesserton Timber Co., Orillia, Ont.

26609. Oct. 5.—Relieving Lake Erie & Northern Ry. from providing further protection at Morell St., Brantford.

26610. Oct. 5.—Approving New York Central Rd. bylaw, Sept. 11, re tariffs of tolls for persons and property; and amending order 24833, Mar. 27, 1916.

26611. Oct. 5.—Approving Quebec Oriental Ry. standard freight mileage tariff, C.R.C. 28.

26612. Oct. 5.—Approving Michigan Central Rd. bylaw, Sept. 11, in respect of freight traffic and rescinding order 16183, Mar. 28, 1912.

26613. Oct. 5.—Relieving G.T.R. from providing further protection at Main St., Seaforth, Ont.

26614. Oct. 6.—Ordering G.T.R. to appoint night and day watchmen at crossing of highway by joint section of C.P.R. and G.T.R. at Golf Links, or Dixie Road, mileage 9.85 from Toronto, pending completion of Toronto-Hamilton highway.

26615. Oct. 9.—Ordering American Express Co. to provide facilities for handling fish shipments from Dominion Ex. Co., Michigan Central Rd. station, St. Thomas, Ont.

26616. Oct. 9.—Relieving G.T.R. from providing further protection at highway at west end of Gore station, Que.

26617. Oct. 9.—Rescinding order 19405, May 29, 1913, which authorized C.P.R. to build spur for Arlington Shingle Co., Nanoose District, Vancouver Island, B.C.

26618. Oct. 5.—Authorizing Saskatchewan Government, on behalf of rural municipality of Eye Hill, no. 382, to make highway over C.P.R. station grounds at Evesham, Sask.

26619. Oct. 9.—Authorizing Palmerston Tp., Ont., to change location of crossing and divert road over C.P.R., near Snow Road, Ont., 20% of cost to be paid out of railway grade crossing fund; C.P.R. to move return fences, cattle guards, planking and crossing sign to new crossing and maintain them.

26620. Oct. 9.—Approving revised location of Canadian Northern Ontario Ry. Scarboro cut-off through York and Scarboro Tps., mileage 3.66 to 7.80 from Yonge St., connection with Ottawa line to be moved short distance east, so that switch will be entirely off road allowance.

26621. Oct. 9.—Relieving C.P.R. from providing further protection at highway 5 mile seast of Yamachiche, Que.

26622. Oct. 9.—Authorizing Canadian Northern Ontario Ry. to build across Dawes Road, hy a suhway, between York and Scarboro Tps., and rescinding order 20640, Oct. 22, 1913.

26623. Oct. 10.—Amending order 26454, Aug. 20, 1917, re bridge over Toronto, Hamilton & Buffalo Ry. at King St., Hamilton, Ont.

26624. Ordering Canadian Northern Ontario Ry. to build subway at Don Mills Road, Lot 1, Con. 3, York Tp., and authorizing it until further order to cross Don Mills Road at grade; and rescinding order 20642, Oct. 23, 1913.

26625. Oct. 10.—Ordering G.T.R. to build crossing between Cons. 11 and 12, near Stevensville, Ont., work to be done by Oct. 31.

26626. Oct. 10.—Amending order 18925, Mar. 27, 1913, re C.P.R. tracks under Canadian Northern Ontario Ry. in E. ½ Lot 1, Con. 4, Scarboro Tp., Ont.

26627. Oct. 10.—Ordering C.P.R., pending re-establishment of daily mixed local service, to stop train 1 on flag at Minnitaki, Ont., and rescinding order 26311, July 12.

26628, 26629. Oct. 9.—Authorizing Canadian Northern Ontario Ry. to build across Eglinton Ave., York Tp., by trestle and rescinding order 20656, Oct. 22, 1913; also to build across highway between Lots 3 and 4, Con. 3, York Tp., and rescinding order 19518, June 9, 1913.

26630. Oct. 10.—Exempting C.P.R. from requirements of Railway Act re notice and consent of shareholders; and recommending to Governor in Council for sanction agreement between C.P.R. and Napierville Jct. Ry., Feb. 26, providing for use by Napierville Jct. Ry of C.P.R. between Delson Jct. and Windsor St., Montreal, and facilities there.

26631. Oct. 11.—Authorizing C.P.R. to build spur at grade for Belgian Orchard Syndicate, across Elm St., Vernon, B.C.; south switch of through siding to be removed and placed so that Elm St. shall have full width of 60 ft. where it crosses C.P.R.

26632. Oct. 12. Amending order 26592, Oct. 2, re G.T.R. freight shed at Beauharnois, Que.

26633. Oct. 11.—Authorizing G.T.R. to operate its trains over C.P.R. sidings to William Rennie Co.'s premises, Chatham, Ont.

26634. Oct. 13.—Suspending, pending hearing by Board, following schedules: Supplements 45 and 46 to G.T.R. C.R.C. no. E-2374; Supplement 18 to C.N.R. C.R.C. no. E-189; Supplement 14 to C.P.R. C.R.C. no. 3280, items 152 and 153; Supplemnt 4 to M.C.R. C.R.C. no. 2675, item 155A; and T.H. & B. Tariff C.R.C. 1176, and ordering that schedules to be superseded by schedules herein set forth be and are hereby continued in force pending Board's decision.

26635. Oct. 12.—Authorizing C.P.R. to build spur for Whitmore Bros., Regina, Sask.

26636. Oct. 12.—Authorizing C.P.R. to build spur for Dryden Timber & Power Co., Dryden.

26637. Oct. 12.—Authorizing New York Central Rd. to rebuild bridge near St. Stanislas, Que.

26638. Oct. 12.—Relieving C.P.R. from providing further protection at Humber Summit crossing, near Woodbridge, Ont.

26639. Oct. 9.—Approving plan, July 22, 1916, showing changes in bridge over C.P.R. on Nelson St., Sudbury, Ont., and authorizing Sudbury-Copper Cliff Suburban Electric Ry. to extend its tracks across same; cost of maintaining bridge, less cost of maintenance of additional work in floor system, made necessary by S.C.C.S.E.R.Co. using bridge, to be paid by C.P.R.

26640. Oct. 13.—Approving clearances at unloading shed at Robin Hood Mills, Ltd., Moose Jaw, Sask.

26641. Oct. 12.—Approving agreement between Bell Telephone Co. and Monk Rural Telephone Co., Carleton County, Ont., dated Sept. 19.

26642. Oct. 16.—Ordering C.P.R. to file tariff reducing stop-over charge for milling western grain, ex-lake, in transit, to 1c per 100 lb., to become effective not later than Nov. 1.

26643. Oct. 15.—Approving agreement, Aug. 22, between Bell Telephone Co. and Dunnet Tp., Ont.

26644. Oct. 15.—Approving agreement between Bell Telephone Co. and Everett Telephone Co., Simcoe and Dufferin Counties, Ont., Oct. 15., 1915.

26645. Oct. 15.—Authorizing Edmonton, Dunvegan & British Columbia Ry. to divert Grande Prairie Trail in s.w. ¼ Sec. 9 and n.w. ¼ Sec. 4, Tp. 76, Range 5, west 6th meridian, Alta.

26646. Oct. 15.—Authorizing C.P.R. to build at grade a second passing siding across D'Arcy St., Cobourg, Ont.

26647. Oct. 15.—Authorizing C.P.R. to construct at grade passing siding across road allowance between Lot 10, Con. 1, Brighton Tp., and Lot 11, Con. 1, Cramahe Tp., Ont.

26648. Oct. 15.—Relieving C.P.R. from providing further crossing protection at Bell's Road, Quebec, Que.

26649. Oct. 15.—Relieving Michigan Central Rd. from maintaining night and day watchmen at first public crossing east of G.T.R. diamond east of Welland, Ont.

26650. Oct. 15.—Ordering that all train movements over crossing by Kettle Valley Ry. of Winnipeg St., Penticton, B.C., in both directions, be limited to 4 miles an hour; all passenger trains backing in from South Penticton to Penticton, or vice versa, to be equipped with tail hose on rear of train, air to be coupled and working on all freight movements between these points.

26651. Oct. 16.—Approving C.P.R. standard plan of double track tunnels on its Western Lines.

26652, 26653. Oct. 15.—Approving Canadian Northern Ry. shelter to be built at Pointe Bleue, Que., and approving its station to be built at St. Felicien, Que.

26654. Oct. 16.—Authorizing G.T.R. to build bridge over Saskatoon Ave., Campbellford, Ont.

26655. Oct. 11.—Dismissing application of South Alberta Hay Growers, Ltd., Pincher Creek, Alta., for commodity rates on timothy seed, in carloads, for home consumption and export.

26656. Oct. 11. Relieving C.P.R. from providing further protection at crossing of Dundas St., Woodstock, Ont.

26657. Oct. 16.—Ordering that Sherman Ave., Hamilton, Ont., be protected by day and night watchmen, appointed by G.T.R. City and G.T.R. each to pay half wages.

26658. Oct. 16.—Authorizing C.P.R. to build diversion of Mill Spur and make temporary road diversions at Ayr Pit, mileage 67.6, Galt Subdivision, Ont.

26659. Oct. 16.—Authorizing G.T.R. to build spur from Imperial Oil Co., Chatham, Ont.

26660. Oct. 15.—Authorizing G.T.R. to operate over two spurs of Burlington Steel Co., Hamilton, Ont.; and approving clearances there.

26661. Oct. 18.—Amending order 26228, June 20, re G.T.R. siding, in Cobourg, Ont., for Thompson MacDonald Co.

26662. Oct. 18.—Disallowing Supplement 2 to Dominion Atlantic Ry. Tariff, C.R.C. 429.

26663. Oct. 18.—Ordering that trees between east and west legs of Y and north of Church St., Brockville, Ont., be cut down; and that movement of Canadian Northern and Canadian Pacific trains over same be limited to 6 miles an hour.

26664. Oct. 18.—Authorizing C.P.R. to build spur for Dominion Blank Book Co., Berthier, Que.

26665. Oct. 17. Ordering G.T.R. to stop train 189 on flag at Malton, Ont.

26666. Oct. 19.—Authorizing C.P.R. to build spur for Andrew Jergens Co., Perth, Ont.

26667. Oct. 19.—Authorizing C.P.R. to build extension to siding for Swift Canadian Co., St. Boniface, Man.

Japanese Railway Mission to America.

A special mission representing the Imperial Japanese Railways arrived on the United States Pacific coast about the middle of October to undertake a study of American transportation and industrial conditions, and proceeded east. The U.S. Secretary of Commerce arranged for the entertainment of the mission until it reached Washington, and designated a Japanese speaking representative of the Bureau of Foreign and Domestic Commerce to conduct the members personally on their trip across the country. Prominent railway officials volunteered to furnish every facility for a thorough study of their systems.

The object of the visit is to investigate the present transportation conditions in the U.S., to inspect the principal industrial plants and mines, to study the loading and unloading of cotton, and to observe the methods employed in the large railway sorting yards. The Imperial Japanese Railways are represented on the mission by Jiro Nakamura, Assistant Traffic Manager; Akio Kasama, Secretary and Purchasing Agent; Dr. Yasujiro Shima, Director of Machinery and Rolling Stock; and S. Kobayashi, Resident Engineer at New York.

The French Government is reported to have ordered a further 9,000 freight cars through the U.S. Government.

Motor Accidents at Level Crossings in Ontario.

The Board of Railway Commissioners has issued the following circular:

In view of the increasing number of accidents at level crossings in Ontario to persons travelling in motors, the board desires that a discussion should be had, in which the different motor associations, municipalities and railways interested should take part, and the best possible methods and protection in the interest of public safety be adopted. Without in any way limiting the discussion, the following questions should be considered:

The matter of the view from the highway of any approaching trains. Factors to be considered from the motorist's standpoint are the speed and braking efficiency of the motors, having regard to the fact that the motor must be stopped after the train is seen.

Whether or not there is any difficulty in seeing the standard railway crossing sign from motors, and whether additional post signs on the road would assist in obviating accidents, for example, warning posts placed at some distance from the crossing, or posts placed in the centre of the highway, about 50 feet from crossing?

Whether humps or hogs-backs should be placed on the road, so as to compel motorists to bring down the speed of their cars to a rate at which they may safely proceed?

Ought motors be brought to a stop before crossing?

Bells or wig-wag signals, which are of the greater benefit to motorists?

Can any change be made in railway regulations which, without injuring the efficiency of the public service, will promote safety?

Ought the regulation whistle signals to be given closer to the highway, or any change be made in the use of the signal or the bell?

Written submissions may be sent by mail to the board at Ottawa, and in addition the matter may be spoken to at any meeting of the board.

In connection with the foregoing circular it may be mentioned that the Vice Chairman of the Ontario Railway and Municipal Board, A. B. Ingram, suggested recently that that board's efforts to protect crossings on railways under provincial jurisdiction should be supplemented by the municipalities, which should erect warning boards on the highways, say, 300 ft. from each crossing, worded, "Beware. Railway Crossing, 300 Feet," or something similar.

J. K. McNeillie's New Position on The Delaware and Hudson.

Following are some particulars of the D. & H. Co.'s Susquehanna Division, of which J. K. McNeillie, formerly General Superintendent, Canadian Government Railways, Moncton, N.B., was appointed Superintendent recently: The main line extends from Binghamton, N.Y., on the south, to Mechanicville and Albany on the north, about 150 miles. There are two branches, viz., Cooperstown and Cherry Valley, each about 21 miles long. The main line is, with the exception of about 24 miles, double tracked and equipped throughout with automatic electric signals. For about 10 miles there is a third tracks for northbound traffic. There is under construction some additional third track for northbound traffic. There gether with certain grade revisions, will give a uniform low grade line where there is the greatest density of traffic.

Extensive terminals are located at Binghamton, Oneonta, Schenectady and Mechanicville. At Nineveh, about 24 miles from Binghamton, is the connection with the Pennsylvania Division, which extends from Nineveh to Wilkes-Barre (a connection with the Pennsylvania Rd.) Carbondale, etc., tapping the Pennsylvania anthracite coal mining region. In this latter territory are located some 42 breakers, and from these operations are loaded from 800 to 1200 cars a day of anthracite coal, which forms a considerable part of the loaded northbound traffic over this division. Bituminous coal, from the Pittsburg district, and other freight received at Wilkes-Barre and other points, also moves via this route. At Oneonta, a city of about 12,000 population, which is the headquarters of the division, there is a double hump yard, having a capacity of some 3,500 cars, through which freight is classified in both directions. A 52 stall locomotive house, efficient coal and ash handling facilities are provided. Locomotive and car repair shops are also located there. At Mechanicville is the connection with the Boston & Maine Rd. and the Delaware & Hudson Saratoga Division, over which Canadian freight moves north to connections at Rouses Point. Near Schenectady is a connection with the New York Central. At Binghampton is a connection with the Erie and the Delaware, Lackawanna & Western.

The density of traffic over the main line is said to be the greatest in the United States, with probably one or two exceptions. As will be seen from the above, freight collected from the anthracite coal region and from connections at Wilkes-Barre and Binghamton for New England points and the Canadian territory via Mechanicville and for Albany and vicinity is moved over this territory, requiring upward of 85 through freight trains daily and a movement of from 4,000 to 5,600 cars. Anthracite coal and ore represent a large part of the traffic, the balance being bituminous coal, merchandise and perishable freight and manufactured products, while there is a heavy traffic developed from the General Electric and American Locomotive Companies, located at Schenectady. The main line runs through a very productive dairy country, and a train of some 21 cars is required daily to ship the milk collected in this territory to New York City, this supply being a considerable factor in the daily requirements of the metropolis.

Central Ry. of Canada Suit.—In the Quebec High Court, Practice Division, Montreal, Oct. 18, Justice Bruneau gave judgment dismissing with costs the action of the Central Ry. of Canada against C. J. Wills and others. This was an action for damages arising out of an alleged breach of contract in connection with the building of a railway from Montreal to Georgian Bay. The parties have been engaged in legal proceedings over the contract ever since construction ceased in 1912. The big suit was carried to the Imperial Privy Council in 1914, and since then the suits for damages have been up before Quebec courts from time to time. It is said that the whole have now been disposed of.

The C.P.R. is reported to have approached the New Brunswick Government with a proposal that the government take over the company's demonstration farm at Fredericton for operation in connection with the Department of Agriculture.

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NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application.

ADVERTISING COPY must reach the publishers by the 10th of the month preceding the date of publication.

TORONTO, CANADA, NOVEMBER, 1917.

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Subscribe for Canada's Victory War Loan.

Canadian Railway and Marine World urges its readers to subscribe for the Dominion War Loan Bonds now being offered, because:

It is absolutely necessary to provide funds to enable Canada to maintain its army at the front and to strengthen it in every possible way.

It is equally necessary to provide funds to be loaned to the British Government to purchase ships, munitions, produce, etc., in Canada, and thereby to keep Canadian industries active, provide a market for products, and stimulate traffic, in which our readers are vitally interested.

The bonds are absolutely the best investment that can be had. They are secured by the whole assets and credit of the country. They yield a most attractive rate of interest—a rate that would not have been dreamed of for government securities three years ago—and will always be saleable quickly and without any difficulty.

As evidence of our absolute confidence in offering this advice, it may be mentioned that Canadian Railway and Marine World's proprietors have invested to the full extent of their ability in the three Dominion War Loans offered previously and intend to do the same in regard to the present offering.

The Essex Terminal Ry.'s plans for an extension from the end of its present line at Ojibway, Ont., to Amherstburg, about 12 miles, having been approved by the Board of Railway Commissioners, the Chick Contracting Co., of Windsor, Ont., has been given a contract for grading. The extension will pass through Sandwich West and Anderdon, the present objective being to reach the Brunner-Mond Canada Ltd. to secure stone and other building material for construction of the Canadian Steel Corporation's plant at Ojibway. If the weather is favorable it is hoped to have track laid by the end of the year.

Locomotive Whistling, etc., at Hamilton.—The Hamilton City Council has been complaining of the ringing of bells and whistling by locomotives on the Toronto, Hamilton & Buffalo Ry., and claims that more noise is made than is necessary. The company claims that it is only obeying the Dominion regulations, and that if the city desires to prevent it a bylaw preventing whistling, etc., can be passed. In this event, it is pointed out, the city would be liable if any accident happened through the failure on the part of a locomotive man to whistle or ring the bell.

Special Freight Arrangements for Live Stock.—The Minister of Agriculture announced recently that arrangements had been made between his department and the railways to prevent depletion of Canadian breeding and feeding stock, insure the feeding of live stock in Canada, and secure the return of feeding and breeding stock to the farms. It comprises: A redistribution policy, which will provide for the movement of stock from areas where feed is light to areas where feed is plentiful. Free freight policy in connection with the transportation of breeding cattle and breeding sheep. Fifty per cent. rebate of freight rate on carload shipments of feeding cattle from Winnipeg to country points in the Eastern Provinces. Free shipment of carloads of breeding sheep and lambs from Toronto and Montreal to the west.

Acquisition of the Canadian Northern Railway by the Dominion Government.

The act authorizing the Dominion Government to acquire the whole of the Canadian Northern Ry.'s capital stock which it does not already own, as passed at the Dominion Parliament's last session, and published in full in Canadian Railway and Marine World for October, provides for an agreement, as to the terms and conditions, to be entered into between the Government and the owners of the stock and for the price therefor being fixed by arbitration. At the time of writing (Oct. 26) we understand that the agreement has not been signed, but that it has been drafted and that its terms have been practically settled, with the possible exception of the maximum price to be paid. As a preliminary step towards the arbitration proceedings the company's books are being audited by chartered accountants appointed by the Government.

During the discussion of the bill in the House of Commons, the Finance Minister stated that Sir William Meredith, Chief Justice of Ontario, would represent the Government in the arbitration to fix the price. Press reports have mentioned F. H. Phippen, K.C., as likely to represent the company as arbitrator, but as he is its General Counsel, his appointment is not considered probable.

As soon as the stock has been transferred the Government may advance not exceeding $25,000,000 to assist the company in paying indebtednesses, and the company will then probably be in a position to place orders for rolling stock, which is imperatively required, and to proceed with necessary works which have been delayed.

Unconfirmed press reports state that Hon. F. Cochrane, ex Minister of Railways, will be appointed chairman of the C.N.R. directorate, and Hon. G. P. Graham, another ex Minister of Railways, has been mentioned as a probable member of the board.

Port Arthur Harbor.—During this year the harbor at Port Arthur, Ont., has been dredged to a depth of 25 ft. below zero of the harbor gauge, which is 601.86 ft. above mean sea level. The main harbor north of the south entrance has been widened and dredged out to a line 150 ft. from the west side of the breakwater, involving the dredging of a triangular area 2,140 ft. long in the eastern part. The main harbor in front of the Canadian Northern Ry. coal wharf has been deepened over an area of 1,700 ft. extending out 250 ft. from the face of the wharf, the north limit of this area being 1,500 ft. distant from the Canadian Northern elevator B.

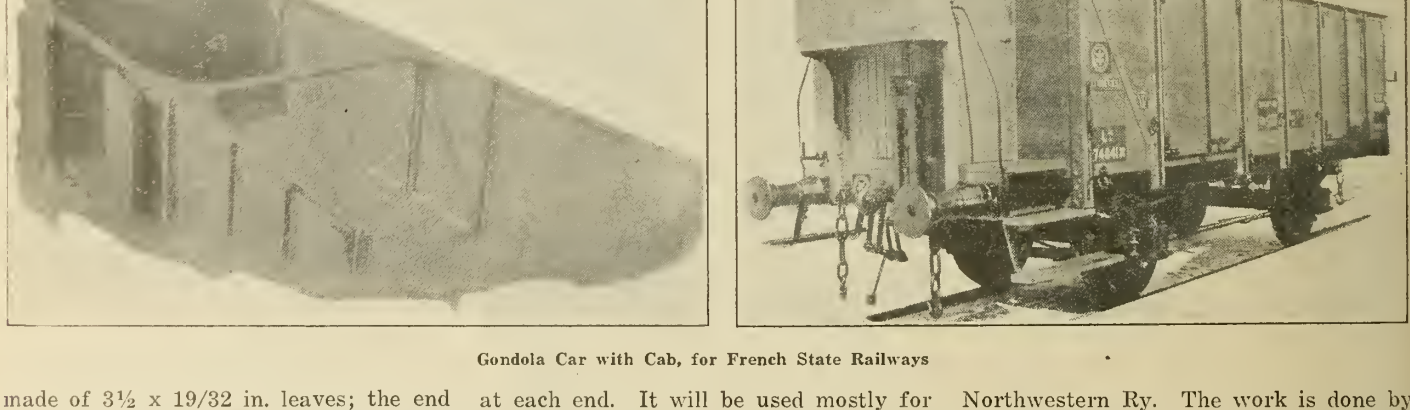
Three Rivers Shipyards, Ltd.—Some particulars about the incorporation of this company were given in Canadian Railway and Marine World for October, since which official information has been received. The shipyard site consists of 75 acres, on Notre Dame St., Three Rivers, Que., about a mile from the city hall. We are advised that it is being equipped, at a cost of about $55,000, with the latest woodworking machinery for building wooden ships. As previously stated, the company has a contract to build two wooden steamships for the Imperial Munitions Board. T. M. Kirkwood, of Toronto, is President and General Manager, and W. T. Donnelly is Vice President and Consulting Engineer.

Gondola Cars with Cabs for French State Railways.

The 1,000 gondola cars with brakeman's cabs which the French State Railways ordered from Canadian Car & Foundry Co. have all been shipped and one of them is illustrated herewith. Their general dimensions are:

Capacity	20 metric tons.
Length over body and end sill	21 ft. 10⅝ in.
Length over buffers	27 ft. 8⅝ in.
Length, inside body	21 ft. 7⅞ in.
Width, inside	8 ft. 2 7/16 in.
Height, from rail to top of floor	4 ft. 1 5/16 in.
Height, from rail to top of side	8 ft. 10⅜ in.
Height, over cab	11 ft. 4½ in.
Wheel base	11 ft. 9¾ in.

They have steel superstructure with wood lining, riveted to an all steel and iron underframe, resting on 2 axles, through the medium of two journal boxes with front cover. The draw bar hooks, screw couplings and safety chains are of open hearth steel, able to stand a pulling indicated as follows: Draw bar hooks and screw couplings, 55,000 kilograms; safety chains and hooks, 20,000 kilograms; safety chain eye bolts, 18,000 kilograms. The buffer volute and bearing spring are made of 3½ x 19/32 in. leaves; the end of each one of the leaves being grooved out so as to form a male and female part, and stop any displacement of the same. They have 41 11/32 in. diameter rolled steel wheels and axles with journals, size 140 x 250 millimetres. The wheels mounted on axle to standard American gauge, 4 ft. 8½ in. Oak, which is usually used on French State Railway cars, has been replaced in this case by yellow pine. The brakes are operated by a hand brake wheel from the inside of the cab, released by hand and applied by counterweights attached to the lever arm, which transmits power to the foundation brake gear. The counterweights are suspended from the brake mast nut, which in turn engages the brake mast. The mast has a special thread with approximately 5 in. pitch, which gives a quick brake application and is keyed to 2 ratchet wheels, which, by an arrangement of springs and levers, hold the brake in either release or applied position. Two brake shoes are applied to each wheel, and the cars are equipped with a special design of trussed brake beam. No air brakes are used and we understand that when freight trains are made up on the French State Railways every fourth or fifth car is equipped with a cab, in which a brakeman rides.



Gondola Car with Cab, for French State Railways

Extension of Canadian Pacific Yards at Lambton and West Toronto.

Considerable progress has been made with the enlarging of the C.P.R. Lambton-West Toronto yards, briefly referred to in Canadian Railway and Marine World last issue. The work consists of lengthening and rearranging the tracks, which will greatly increase the capacity and facilitate the operation of the yards. The tracks will be long enough to hold the longest trains. The present neck at Runnymede Road crossing, which now causes delay and other troubles, will be removed.

The Lambton yard, located between Scarlett Road and Runnymede Road, is being divided into two parallel yards, with independent leads at both ends. The yard will be used entirely for receiving and dispatching trains. It will provide for double track movements and for the easiest possible access to and from the locomotive house for incoming and outgoing locomotives. The West Toronto yard, located between Runnymede Road and Keele St., is also being divided into two yards, with independent switching tracks at each end. It will be used mostly for sorting cars for the Toronto terminals and may be called the "local yard."

The Lambton yard is being lengthened 750 ft. by acquiring extra land and diverting St. Clair Ave. to the north between Scarlett Road and Jane St. The two switching tracks at the west end of the yard are being extended westward. In order to extend the yard at the east end, it is necessary to widen the present subway at Runnymede Road about 80 ft. to the north. This extension is being built in reinforced concrete throughout. The bents consist of reinforced concrete posts and caps, on which are placed concrete slabs, spanning the four openings, two of which are for the roadways and two for the sidewalks. The concrete slabs are being constructed on the ground adjoining the subway, and are placed in position by a portable crane. The slabs, which are 4 ft. 7 in. wide, are being laid with ¼ in. spaces. The joints are being filled with grout, and the entire floor will be made waterproof before the tracks are put on. When the present subway was built this extension was contemplated and the two abutments were built long enough for it.

The extension westward of the local yard is achieved by diverting Ethel Ave. to the north for 800 ft. west of Runnymede Road, for which some extra land was bought. A local freight and transfer yard and platform has been built west of Jane St. to take care of the transfer of freight which was formerly done in John St. yard. This improvement has resulted in a considerable saving in time and power. The construction of this transfer yard has necessitated the moving of Lambton station to Scarlett Road, a short distance west. Track scales will be located at the most convenient points.

The work in connection with the widening of Runnymede Road subway is being done by Archibald & Holmes, contractors, of Toronto. All the track work is being done by the C.P.R. forces.

The Lambton yard was fully described and illustrated in Canadian Railway and Marine World, Nov., 1913, pg. 532.

Oxyacetylene Welding for Track Repairs

Repairing of frogs and track crossings by building up the worn places by oxy-acetylene welding is being practiced in side track repair work in the Chicago & Northwestern Ry. The work is done by the section gangs and the success has been such that it is intended to provide an outfit for each roadmaster's division. The same outfits are used for cutting rails, boring bolt holes and welding pieces of angle-bar under the rail base to serve as anchors. Particulars of the work were given at the annual meeting of the Roadmasters' and Maintenance of Way Association recently by P. J. McAndrews, Roadmaster C. & N. W. R., Sterling, Ill. The welding and cutting have been confined to side track work as yet, but Mr. McAndrews considers that with proper care the process can be employed in main track repair work.

Pullman Company's Earnings.

The Pullman Co. reports for the year ended July 31, as follows:

	1917.	1916.
Gross income	$49,184,559	$43,761,465
Operating expenses	29,381,563	24,913,914
Depreciation	6,170,584	6,467,184
Balance	*$13,632,412	$12,380,367
Dividends	9,599,784	9,599,760
Surplus	$4,032,628	$2,780,607

*Equivalent to $11.36 a share earned in the fiscal period on $120,000,000 capital stock, compared with $10.31 a share in 1915-1916.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canadian Northern Ry.—H. T. HAZEN, M.Can.Soc.C.E., heretofore Chief Engineer, Toronto Suburban Ry., has been appointed Engineer, Maintenance of Way, Eastern Lines, C.N.R. Office, Toronto.

GEO. COLLINS, heretofore Special Representative, Toronto and Trenton, Ont., has been appointed Superintendent Branch Lines, Toronto District, Ontario Division, vice J. Irwin, on leave of absence. Office, Trenton, Ont.

W. M. JACKLIN, heretofore Superintendent, Maintenance of Way, has been appointed Superintendent of Track, Ontario Division, and his former position has been abolished. Office, Toronto.

J. R. MACKENZIE, heretofore Division Engineer, Rosedale, Toronto, has been appointed Assistant Engineer, Ontario Division, and will act as Assistant to H. T. Hazen, Engineer Maintenance of Way. Office, Toronto.

The positions of division engineer, Ontario Division, held heretofore by J. R. MACKENZIE, Toronto, and E. W. DELANO, Capreol, Ont., having been abolished, Mr. Delano has left the company's service.

The superintendents of the various districts of the Ontario Division have been given charge of maintenance of way. Supervisors of track, and supervisors of bridges and buildings, now report to the superintendent of their respective districts.

E. DAGG has been appointed ticket agent, Union Station, Winnipeg, vice B. G. Rutley, resigned.

C. H. WORBY, heretofore Sleeping and Dining Car Agent, Saskatoon, Sask., has been appointed Sleeping and Dining Car Agent, Winnipeg.

H. C. LaROCHE, heretofore dining car steward, has been appointed Sleeping and Dining Car Inspector, Winnipeg, vice F. Taylor, promoted.

H. MILNES, heretofore dining car steward, has been appointed Sleeping and Dining Car Inspector, Winnipeg.

H. COLEY, heretofore Sleeping and Dining Car Agent, Edmonton, Alta., has been appointed Sleeping and Dining Car Agent, Saskatoon, Sask., vice C. H. Worby transferred.

F. TAYLOR, heretofore Sleeping and Dining Car Inspector, has been appointed Sleeping and Dining Car Agent, Edmonton, Alta., vice H. Coley, transferred.

Canadian Pacific Ry.—C. O. McHUGH has been appointed Chief Dispatcher, Brownville Division, vice W. R. Howard. Office, Brownville Jct., Me.

J. G. SUTHERLAND, heretofore Car Service Agent, Calgary, Alta., has been appointed Inspector of Transportation, Western Lines, vice C. L. Leighty, who was appointed Superintendent of Telegraphs, Ontario District, Toronto, some time ago. Office, Winnipeg.

H. L. HORN, heretofore dispatcher, Moose Jaw, Sask., has been appointed Chief Dispatcher, Winnipeg, vice J. L. Able, who has been granted extended leave of absence.

J. J. McDONNELL, heretofore dispatcher, Lethbridge, Alta., has been appointed Chief Dispatcher, Saskatoon, Sask., vice J. H. Scott transferred.

J. H. SCOTT, heertofore Chief Dispatcher, Saskatoon, Sask., has been appointed Car Service Agent, Calgary, Alta., vice J. G. Sutherland promoted.

C. BOARDMAN, heretofore Locomotive Foreman, Red Deer, Alta., has been appointed Locomotive Foreman, Strathcona, Alta., vice Jas. McGowan transferred.

—JAMES McGOWAN, heretofore Locomotive Foreman, Strathcona, Alta., has been appointed Locomotive Foreman, Red Deer, Alta., vice C. Boardman, transferred.

Delaware & Hudson Co.—M. D. BOMHOWER, formerly General Foreman, Angus Shops, C.P.R., Montreal, has been appointed Division Car Foreman, Pennsylvania Division, D. & H. Co., reporting to the Master Car Builder. Office, Carbondale, Pa.

Grand Trunk Ry.—The following station agents have been appointed: Rouses Point, N.Y., W. W. Cooper; Cornwall Jct., Ont., C. F. Brydges; Smithfield, Ont., E. Harrington; Gelert, Ont., P. C. Brown; Holland Landing, Ont., G. W. D. Stevenson; Baden, Ont., W. Russell; Park Hill, Ont., W. Waugh; Longwood, Ont., R. T. Brand.

Grand Trunk Pacific Ry.—The following station agents have been appointed: Mawer, Sask., W. H. Thompson; Juniata, Sask., C. T. Bryant; Riceton, Sask., R. McCammond; Lewvan, Sask., J. H. Walker; Entwistle, Alta., C. W. Jaminette; Pocahontas, Alta., V. A. Scott; Mirror, Alta., G. W. Angus; Saltwell, Alta., L. D. Davis; Coalspur, Alta., D. L. Lyons; New Hazelton, B.C., J. F. Supon; Giscorne, B.C., G. E. Blundell.

Michigan Central Rd.—P. G. FINDLAY, heretofore Assistant to Manager, New York Central Fast Freight Lines, Chicago, Ill., has been appointed General Freight Agent, M.C.R., vice W. C. Rowley, resigned, to enter private business. Office, Detroit, Mich.

J. H. MEGLEMRY, heretofore Division Freight Agent, Buffalo, N.Y., has been appointed Assistant General Freight Agent there, and his former position has been abolished. This is a new position.

W. C. LEWIS, heretofore Division Freight Agent, Bay City. Mich., has been appointed Assistantl General Freight Agent there, and his former position has been abolished. This is a new position.

F. B. ROWLEY, heretofore Commercial Agent, Minneapolis, Minn., has been appointed Assistant General Freight Agent, Chicago, Ill., and the position of Division Freight Agent there, heretofore held by G. M. Weaver, who has resigned to enter private business, has been abolished.

New York Central Fast Freight Lines.—F. O. STAFFORD has been appointed Manager, vice Carl Howe, whose appointment as Traffic Manager, Michigan Central Rd., was anuounced in our last issue. Office, Chicago, Ill.

Reid Newfoundland Co.—R. G. REID, heretofore General Superintendent, has been appointed a Vice President. Office, St. John's, Nfld.

J. P. POWELL, heertofore Assistant General Superintendent, has been appointed General Superintendent, vice R. G. Reid promoted. Office, St. John's, Nfld.

Winnipeg Joint Terminals.—JAMES CLARK, heretofore Night Yardmaster, Canadian Northern Ry., Fort Rouge, Man., has been appointed General Yardmaster, Winnipeg Joint Terminals, vice W. McAuley, resigned.

Railway Rolling Stock Notes.

The G.T.R. has received a mikado type locomotive from Canadian Locomotive Co.

The Toronto, Hamilton & Buffalo Ry. has received 2 six-wheel switching locomotives from Canadian Locomotive Co.

The C.P.R. has received 485 steel underframe coal cars and a decapod locomotive from its Angus shops, Montreal, and a stock car and 4 vans from its Winnipeg shops.

The Russian Government is reported to be receiving quotations for the supply of 10,000 four-wheel freight cars. It is announced that the U.S. War Purchasing Board has permitted the Russian Government to place an order for 3,000 of such cars in the U.S.

Press reports state that the Russian Government is arranging to place additional orders for 1,500 locomotives in the United States, and that it is likely the order will be divided between the American Locomotive Co. and the Baldwin Locomotive Works.

Canadian Government Railways have received a ditcher from F. H. Hopkins & Co.; 69 refrigerator cars from Canadian Car & Foundry Co.; and the following second hand rolling stock from the General Equipment Co.: 2 locomotives, 141 coal cars, 30 tons capacity, and 23 box cars, 30 tons capacity.

The Eastern Car Co., since Sept. 14, has shipped 250 box cars, 20 tons capacity, for the Paris & Orleans Ry., leaving 100 yet to be shipped on an order for 2,000; 125 gondola cars for the French State Railways, leaving 675 to be shipped on an order for 1,000; and 100 box cars, 1,200 poods capacity, for the Russian Government, on an order for 3,000.

Railway Finance, Meetings, Etc.

Grand Trunk Dividends Passed.—The Secretary has issued the following notice: "The board has decided, in view of the great increase in working expenses, owing to war conditions, that it is inadvisable to declare any interim dividend on the 4% guaranteed and preference stocks. Notwithstanding the utmost exertions, the company has been unable up to the present to obtain the sanction of the Railway Commission to an increase in rates."

Pacific Great Eastern Ry.—The British Columbia Government has issued a writ against the officers and directors of the P.G.E.R., in which it is alleged that the members of the company are not legally entitled to hold the shares, that the directors are not legally qualified, and that all the proceedings taken at the recent annual meeting were illegal.

Temiscouata Ry.—Gross earnings for July $24,965; operating expenses $20,259; net earnings, $4,706.

Timiskaming and Northern Ontario Ry.—Passenger traffic receipts for Aug., $75,080.95: freight traffic, $127,202.33; total, $202,283.28, against $83,798.80 passenger traffic; $90,444.75 freight traffic; $174,243.55 total, for Aug. 1916.

White Pass and Yukon Route.—Gross earnings from Jan. 1 to Sept. 14, $1,557,125 against $1,513,817 for same period 1916.

Outside Ticket Offices.—A press report stated recently that there was a movement on foot in railway circles to abolish the outside ticket offices in the smaller Canadian cities and towns. No confirmation of the report is obtainable. On the other hand, several passenger officials state that it is without foundation.

Travelling Engineers and Fuel and other War Problems.

The Travelling Engineers' Association will not hold its annual convention in the United States this year, owing to war conditions. Following are extracts from the President's circular announcing this.

While much has been done by the members of this association, I wish to remind you what can be done in the way of greater assistance to the Council of National Defence. The conservation of fuel is one of the most serious problems confronting the government and the railways today. Many railways have already organized departments for supervising the handling and performance of locomotives. With the cost of fuel as great as it is now, the most rigid economy should be practiced—and to this end locomotive men must be thoroughly trained—they must be shown how to get the most out of every pound of fuel fired. The only way to do this is by supervision. It will therefore be necessary for the travelling engineer to give the closest attention to firing methods and inspection of idle engines under steam, with a view of reducing to a minimum the consumption of coal. It is of great importance that locomotives be loaded to their full capacity. This will not only help to relieve the congestion, but more work will be obtained from available power, in other words, make the locomotives pull to the limit of their weight, for every possible pound of pull is needed in the war.

The modernizing of old locomotives will require a great deal more attention, with a view to bringing them to the maximum efficiency. In modernizing old locomotives we must equip them to take the place of new ones that cannot be built in time. We are now in a position where all locomotives and all men must do more than they have ever done before.

All members of this association should investigate labor saving appliances. On account of the shortage of labor, it will be necessary for all members to make a thorough study of devices to be placed on locomotives that will produce greater efficiency and economy.

Many new problems will arise in the handling of long troop trains and heating them by steam. The vastness of this undertaking is better understood if it is known that one field army, which consists of 80,000 men, requires 6,229 cars, comprising 366 trains, hauled by 366 locomotives, and yet this is only 4% of the new army to be moved.

A great many locomotive men and firemen who are of military age, have responded to the call of our country; many regiments composed of railway employes are now in France ready to take places where needed. This patriotic response to our nation's call has necessitated the promoting of senior firemen and the employment of a great many inexperienced men, who will have to be educated, and in all instances increased supervision will be necessary to bring them to the highest standard of efficiency. It is important that they understand what we want and why we want it. On account of the scarcity of fuel a poorer quality may have to be used, and these men must be taught how to use each scoop of coal so that every unit of heat possible will be generated. The travelling engineer, from his past experience as a locomotive man, can prove very valuable to the railways in co-operating with the various operating departments of the service. It is therefore up to us to take counsel together and see if we cannot help reduce the cost of fuel and make more perfect the transportation chain.

As congestion may occur on some of the railways it may be necessary to transfer or interchange locomotives, the association should at this time give special attention to formulating plans for the interchange of these locomotives.

The majority of the members of this association are men who have passed the military age as now prescribed by the United States War Board, but knowing that all of us wish to have some part in the responsibilities assumed by our government, I urge upon you, if you have not already done so, to subscribe for one or more Liberty bonds and in this way do our bit, although we cannot go to Europe to do it.

It is the duty of all members to be loyal to the association regardless of the fact that it is necessary this year to postpone the convention. In this way only can we keep up the splendid reputation of the association. I therefore recommend that the reports of the committees contain the comments made by various members of this association and the annual report published as heretofore.

The work of the association has been very productive this year—the subjects are of unusual interest and I feel that a vote of thanks should be extended to the different committees to those who have in any way assisted them and to our most efficient secretary. In closing, may I use the words of the world famed Rip Van Winkle, "May we live long and prosper."

The Henderson Transfer and Lighterage Co., the incorporation of which was announced in our last issue, will operate chiefly in transferring grain between Fort William and Port Arthur, in connection with the Davidson and Smith Elevator Co., Port Arthur. The company has acquired the s.s. Robert L. Fryer of U. S. registry from R. J. Henderson, Winnipeg, who is President. This vessel is equipped for all kinds of wrecking and lighterage work, and was built at West Bay City, Mich., of oak, in 1888. The hull is built with diagonal strapping on the frames, wooden arches, steel boiler house, steam pump wells, etc., and her dimensions are: length 281 ft., breadth 41½ ft., depth 21½ ft.; tonnage, 1,810 gross, 1,451 register. She is equipped with triple expansion engines with cylinders 19, 32 and 50 ins., diar., by 40 ins. stroke; 850 i.h.p. at 88 r.p.m., and supplied with steam by 2 Scotch boilers 10 by 11 ft., at 150 lbs. J. R. Smith is General Manager of the company.

The s.s. George A. Graham was wrecked at South Shore, off Manitoulin Island, Lake Huron, Oct. 7, during a gale, and became a total loss. She was built at Chicago in 1891, and was originally named Marina. The hull was of steel, with double bottom for watertight ballast, steel boiler house, three watertight and two non watertight bulkheads, complete electric lighting plant, etc., and she was equipped with triple expansion engines, with cylinders 24, 38 and 61 ins. diar. by 42 ins. stroke, 1,200 i.h.p. at 75 r.p.m., supplied with steam by two Scotch boilers 14 by 12½ ft. at 125 lbs. Her dimensions were: length 292 ft., breadth 40 ft., depth 24½ ft.; tonnage 2409 gross, 1577 register. She was owned by the Montreal Transportation Co., having been recently acquired from the Canadian North West Steamship Co., Toronto, with that company's other steamships, Atikokan and Paipoonge and barge Thunder Bay.

Canadian Ticket Agents' Association Meeting.

The 31st annual meeting of the association was held at Montreal, Sept. 26. For the first time in its history, the association assembled for a one day purely business meeting, social features, always an attraction, being eliminated, and for this reason it was thought that there would be but a small attendance, but the members turned out in greater numbers than at Port Arthur last year. The Secretary-Treasurer's report showed that the association, both numerically and financially was prospering, 25 new members having joined during the year.

C. A. Cavins, G. P. and T. A., Chicago and Northwestern Lines, as accredited representative of the American Association of Passenger Traffic Officers, presented greetings from that association, congratulated the members on their work in the past and encouraged them to continue their good efforts in the future. He gave many statistics showing the growing importance and advance of railway work and interests in the United States and Canada, and foretold of greater things to be. Short addresses were given by W. S. Cookson, General Passenger Agent, G. T. R., C. B. Foster, Asst. Passenger Traffic Manager, C.P.R., and W. H. Snell, General Passenger Agent, C.P.R., George Ham, of the C.P.R. headquarters staff, and others. All spoke in complimentary terms of the association's objects and the advantages of a yearly reunion for the purpose of an interchange of opinions and mutual acquaintance.

President Hare gave a resumé of the association's progress during the past twelve months, and impressing upon all the importance of increasing the membership. He strongly advocated courtesy as a winning factor in an agent's dealing with the public. Many matters of interest to the ticket seller were discussed. It was unanimously decided that all members on military service should be kept in good standing on the books until the end of the war.

The following were elected officers: President, E. R. Blow. C.P.R., Whitby, Ont.; 1st Vice President, H. F. Whittier, G.T.R., Trenton, Ont.; 2nd Vice President, J. Ransford, G.T.R., Clinton, Ont.; 3rd Vice President, J. A. McDonald, C.P.R., Valleyfield, Que.; Secretary-Treasurer, E. da la Hooke, G.T.R., London, Ont.; Auditors, B. Caswell, C.P.R., Smiths Falls, Ont.; Executive Committee, W. Jackson, C.P.R., Clinton, Ont., W. J. Moffatt, G.T.R., Toronto, A. M. Hare, G.T.R., Tillsonburg, Ont., F. W. Churchill, C.P.R., Collingwood, Ont., C. B. Janes, C.P.R., Orillia, Ont. The Honorary Counsel, J. H. Flock, K.C., London, Ont., and Honorary Physician, Dr. W. Shaw, Clinton, Ont., continue in office.

Australia's Transcontinental Railway was opened Oct. 22.

The World's Shipyards.—An inventory of the world's shipbuilding facilities completed recently by the Japanese Government's Shipping Affairs Bureau is said to show that there are 850 shipyards, of which 264 are equipped to build steel ships of 1,000 tons or more, while 416 are able to turn out vessels of less than 1,000 tons. They are: Britain, 236; British colonies, 58; Holland, 105; Germany, 51; Japan, 25; Italy, 18; France, 25; Austria-Hungary, 9; Spain, 14; Belgium, 7; America, 48; Norway, 24; Sweden, 17; Denmark, 9; Russia, 17; China, 5; other nations, 12.

Traffic Orders by Board of Railway Commissioners.

Pulp Rates to United States.

26547. Sept. 20.—Order 24915, April 22, 1916. suspending certain tariffs increasing rates on wood-pulp and sulphite pulp from stations in Canada to points in the United States. It is ordered that the said order be rescinded, subject to and upon the condition that the rates from Ottawa, Hull, Hawkesbury, and Buckingham to destinations in Central Freight Association territory included in the suspended tariffs, except Jackson, Battle Creek, Vicksburg, and Kalamazoo, Mich., be revised to the basis of 19 1-10c. to Chicago, in accordance with the established percentages thereof, all fractions of 1c in the rates, excepting the ½c, to be eliminated in accordance with the following rule: Under .25, drop; .25 to .74, ½ cent; over .74, 1 cent. And it is also ordered that the rates from Ottawa, Hull, Hawkesbury, and Buckingham to Jackson, Battle Creek, Vicksburg ,and Kalamazoo, be made 1c less than the rates from Grand Mere.

Fibre Board Cheese Box Rates.

26548. Sept. 19.—Re application of Canada Cheese Box Co., Ltd., for the same freight rates on fibreboard cheese boxes as apply on ordinary wooden cheese boxes. It is ordered that the rates and minimum weight to be charged by railway companies on fibreboard cheese boxes, in carloads, be those concurrently charged between the same points in Canada on wooden cheese boxes, in carloads; and that prompt effect be given this order by amendment of the Canadian Freight Classification, or by a commodity tariff of general application.

Commodity Rates on Canned Goods.

26572. Sept. 26. Re complaint of Dominion Canners, Ltd., against withdrawal of joint commodity rates on canned goods from points on Canadian Northern Ry., south of Trenton, Ont., to points in Ontario west of Ottawa, Peterborough and Whitby, and the failure of the C. N. R. to comply with order 26168, May 31, 1917. It is ordered that the C.N.R. be required to publish and file its proposed joint tariff on canned goods, in carloads, the basis of which is contained in its submissions to the board, to become effective not later than Nov. 1; that the railway companies made parties to the said joint tariff file concurrences therein on or before Nov. 1, and that order 26168, May 31, 1917, be rescinded.

E. D. & B.C. Ry. Standard Freight Tariff.

26589. Sept. 27. Granting application of Edmonton, Dunvegan & British Columbia Ry. under Sec. 327 of the Railway Act, for approval of its Standard Freight Tariff, C.R.C. no. 62, effective Oct. 1, 1917.

Quebec Oriental Ry. Freight Tariff.

26611. Oct. 5. Granting application of Quebec Oriental Ry. under sec. 327 of the Railway Act, for approval of its Standard Freight Mileage Tariff, C.R.C. no 28.

Minimum Weight Tariffs Suspended.

26634. Oct. 13. Re complaints of Canadian Manufacturers' Association and Toronto Board of Trade against proposal of railway companies, by schedules filed to become effective October 15, 1917 (Michigan Central Rd., Nov. 1), to increase aggregate minimum weight of less than carload shipments of fresh meat, dressed poultry, packing-house products, butter, and eggs, when loaded in refrigerator cars on private sidings, to 15,000 lb. per car. Upon reading the complaints filed, and in default of answers thereto by the carriers affected thereby, it is ordered that the following schedules be suspended, pending hearing by the board, viz., supplements 45 and 46 to Grand Trunk Tariff, C.R.C. no. E-2374; supplement 18 to Canadian Northern Ry. Tariff, C.R.C., no. E-189; supplement 14 to Canadian Pacific Tariff, C.R.C., no. E-3280, items 152 and 153; supplement 4 to Michigan Central Tariff, C.R.C. no. 2675, item 155A; Toronto, Hamilton & Buffalo Tariff, C.R.C. no. 1176. And it is further ordered that the schedules to be superseded by the schedules herein set forth be continued in force pending the board's decision on the hearing to be had.

Milling in Transit Charge.

26612. Oct. 16. Re complaint of Dominion Millers' Association against milling-in-transit charge of 2c per 100 lb. made by Grand Trunk and the Canadian Pacific Railways on grain ex-lake. It is ordered that the C.P.R. be required to publish and file a tariff reducing the stop-over charge for milling western grain, ex-lake, in transit, to 1c per 100 lb.; the said tariff to be made effective not later than Nov. 1.

Commodity Rates on Timothy Seed.

26655. Oct. 11. Re application of South Alberta Hay Growers, Ltd., of Pincher Creek, Alta., for commodity rates on timothy seed, in carloads, for home consumption and for export. It is ordered that the application be refused.

Minimum Carload Weights for Apples.

26662. Oct. 18—It appearing that the Dominion Atlantic Ry. has, unauthorized by the board, published and filed Supplement no. 2 to its Tariff C.R.C. 429, increasing minimum weight of apples, in carloads, from 24,000 lb. a car, as shown in Canadian Freigh Classification 16, approved by the board, to 30,000 lb. a car, it is ordered that the said supplement be disallowed.

The Dominion Government Transportation Policy.

In a statement issued by the Premier, Sir Robt. Borden, on Oct. 18, announcing the new union government's policy it is stated that it will include "the development of transportation facilities; the co-operative management of the various railway systems, so as to secure economy in operation, to avoid unnecessary construction, and to secure the widest and most effective use of existing railway facilities; the encouragement and development of the shipbuilding industry, and the establishment of steamship lines upon both oceans and upon the Great Lakes; co-operation with the various provincial governments for the improvement of highways; and the investigation of the possibilities of air service for important national purposes."

In regard to the references to the establishment of steamship lines, in the statement above quoted, we are officially informed that the government's policy has not been fully determined and we are therefore unable to state whether government owned lines or subsidized lines are contemplated.

The Anglo-American Shipping Co., Ltd., has been incorporated under the Dominion Companies Act, with $20,000 capital ,and office at Montreal, to build and operate steam and other vessels, and to conduct business as common carriers, shipping agents within and without Canada, and to conduct a general towing and wrecking business.

Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co. has opened offices at Jonquiere, Que., Beamsville, Ont., and Dropmore, Man.; and has closed its offices at Marsouins, Que., and Sparrow Lake, Ont.

Jas. T. Troyer, heretofore in charge of the C.P.R. Telegraphs in the Toronto News office, has been appointed agent, C.P.R. Telegraphs at Guelph, Ont. Prior to his departure from Toronto, he was presented with a pipe by his associates.

The Pacific cable, operated by the Pacific Cable Board, made a profit during the past year, and therefore the usual contributions will not be required. In addition to Great Britain, Canada, Australia and New Zealand are responsible for shares in any deficiency arising from operation.

The Great North Western Telegraph Co.'s 36th annual meeting was held at Toronto recently. The board was re-elected for the current year as follows: Z. A. Lash, K.C., President; Adam Brown, Vice President; F. B. Hayes, Aemilius Jarvis, D. B. Hanna, R. P. Ormsby, Hon. F. Nicholls, directors. G. D. Perry is General Manager, A. C. McConnell, Secretary and Auditor, and D. E. Henry, Treasurer.

The Association of Railway Telegraph Superintendents will hold a special meeting, Nov. 22, at Chicago, Ill., to consider the conservation of telegraphing and telephoning on both commercial and railway wires; the shortage of operators, and plans for schools to teach operators, and the emergency use of wire facilities in the operation of railways to meet the war situation.

Among the Express Companies.

E. V. Clare has been appointed agent Canadian Ex. Co., Moose Jaw, Sask.

R. S. Hodgson has been appointed acting route agent, Dominion Ex. Co., Winnipeg, vice W. A. McDonald.

G. A. Howard has been appointed agent, Canadian Northern Ex. Co., Emerson, Man., vice H. J. Berry.

N. R. Weir has been appointed route agent, Dominion Ex. Co., Campbellton, N.B., vice K. Copeman promoted.

E. Calder has been appointed agent, Dominion Ex. Co., Charlottetown, P.E.I., vice L. C. Goodge, transferred.

C. L. Bowles, heretofore route agent, has been appointed Auditor of Agencies, Canadian Northern Ex. Co., Winnipeg.

L. C. Goodge, heretofore agent, Dominion Ex. Co., Charlottetown, P. E. I., has been appointed agent at St. John, N.B.

K. Copeman heretofore route agent, Campbellton, N.B., has been appointed acting agent, Dominion Ex. Co., Halifax, N.S.

The Board of Railway Commissioners has ordered the American Ex. Co. to provide facilities for handling fish shipments from the Dominion Ex. Co. at the Michigan Central Rd. station at St. Thomas, Ont., other than necessary checkers that may be supplied by the companies. The cost of service, other than checking, to be divided equally between the American and Dominion Ex. Cos., and payments to be made to the former by the latter, the Dominion Ex. Co. having the privilege of furnishing half of the help in lieu of payments.

Electric Railway Department

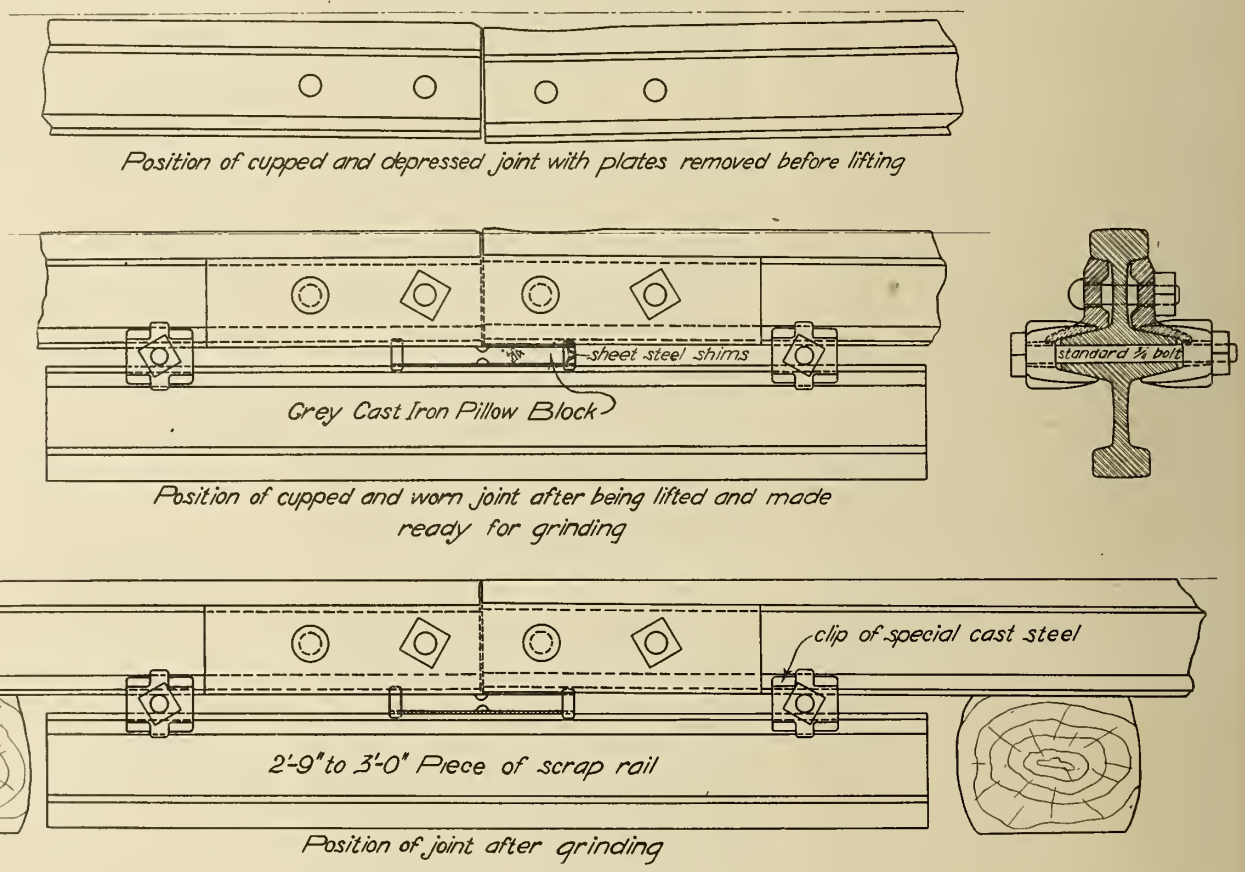
A New Trussed Rail Joint on the London Street Railway.

By C. B. King, Manager, London Street Railway.

That necessity is the mother of invention was again proved when we found it necessary to devise some kind of rail joint that could be used to repair tracks more permanently than any we had used previously. Quite a lot of the track had become worn at the joints, by reason of the joints working loose, allowing the ends of the rails to become bent down and badly pounded. It was also realized that some kind of joint was needed which would overcome the peening effect of the wheels causing the rails to arch up in the centre and which increased the bending down of the ends. Various kinds of joints on the market had been tried but without success as they would loosen again in a very short time. It was found with all of those tried that the extreme ends of the rails would begin to loosen, as was shown by the gresh rust, soon found, for only an inch or so at the ends between the rail and the joint plates. This looseness would continue to grow away from the ends of the rails, even while the bolts were yet perfectly tight, until it reached the ends of the plates, when the bolts would begin to show signs of looseness, and then very shortly all the plates and bolts would become quite loose. This demonstrated that the rails needed some kind of joint that would hold the extreme ends of the rails rigid, and yet with some degree of independence of each other, to that the worn rail might be lifted more than the other.

With these conditions to meet various experiments were made which resulted in a joint shown in the accompanying illustrations. The essential feature of this joint is the special cast steel clip, which clamps the base of the running rail to the base of the inverted rail used as a truss. As these clips are drawn up, the slopes on the bases of the rail cause the truss rail to be raised. This motion is transmitted to the ends of the running rails, through the cast iron pillow block which has been previously inserted between the truss rail and the ends of the running rails, thereby lifting the ends of the rails so as to take out the downward bends and to overcome the arching caused by the peening of the wheels. The extent of such lifting depends upon the thickness of the base of the rail, the thickness of the pillow block, and the extent to which the clips are drawn up. The size of the bolt may also influence this, so that these details must be adjusted for each joint, according to its worn condition. As it is desirable to make use of the full strength of the clip, it is, however, drawn up as close as possible with the bolt. For an 80 lb. rail, or lighter, a ¾ in. bolt has been found most satisfactory, but with a rail having a thicker base, a ⅝ in. or even a ½ in. bolt may be used. When using a ¾ in. bolt the pillow block used is ¾ in. also, to make a level joint, as is most desirable in laying new rail; but when repairing old rail, one or more sheet steel shims are used, in addition to the pillow block, in order to lift the ends enough, so that when ground off the joint will be level. This is illustrated in the accompanying drawing showing where the positions of badly pounded rail are usually found; quite a distance below the original level. When the truss rail and pillow block with the necessary shims and clips are attached, the ends of the rail are bent upwards, so as to be slightly above the original level; just enough, however, so that, when this extra elevation is ground off, the cupping or other battering of the rail will have completely disappeared, as, or even better, than in new track. The truss rail used is scrap, equal in weight or heavier than the running rail, though it is not necessarily of the same section.

When the characteristics of this joint leaving the ends level, and just as good


Position of cupped and depressed joint with plates removed before lifting
sheet steel shims
Grey Cast Iron Pillow Block
standard ¾ bolt
Position of cupped and worn joint after being lifted and made ready for grinding
clip of special cast steel
2'-9" to 3'-0" Piece of scrap rail
Position of joint after grinding

Trussed Rail Joint, London Street Railway.

Old fish plates or angle bars must be changed from side to side or made smaller so as to permit the lifting of one rail as shown. Plates are needed in this joint to hold the rails in line only, so that common bar irons may he used as fish plates.

Insert, under pillow block casting, a steel shim, thick enough to raise the least worn rail so that when ground off the end will have a sharp corner.

Insert on top of pillow block casting, and under cupped rail only, a steel shim of proper thickness, so that when ground off the cup has disappeared.

To make a level joint, when no grinding is necessary, no steel shims are necessary.

Should the joint be inclined to rise above the level, break a pillow block, and insert one half outside the clips, at ends of truss rail, as shown by dotted lines.

In case of rail with a very thick base, a smaller diameter bolt, and a proportionately thinner pillow block, must be used.

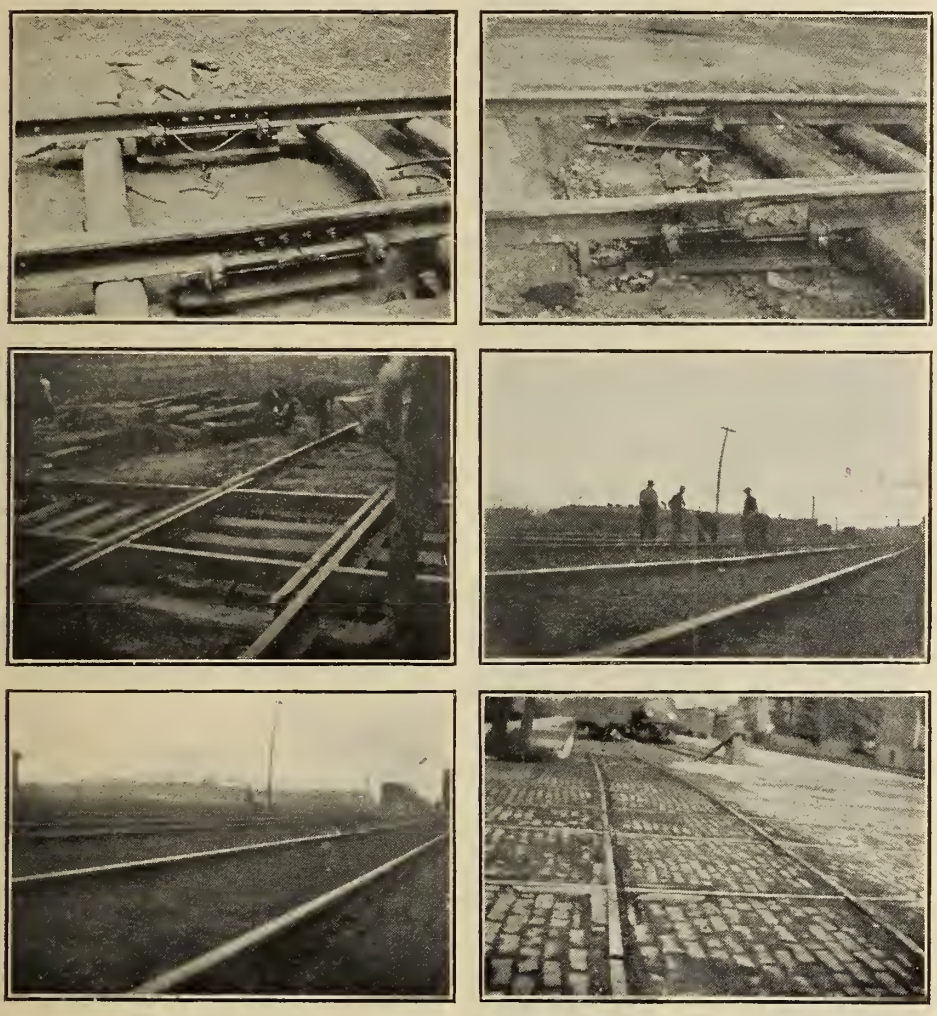
are studied they are found to be peculiar and unlike those of any other joint now on the market. In any kind of angle bar, fish plate, or other similar joint, the stresses on the angle bar or fish plate are reversed when the load passes from one rail to the other, while in this trussed joint the stresses remain in the same direction. This seems to be the real reason this joint remains tight, while others loosen, and why no "working" of the part is possible. The constant spring tension tends to bend the ends of the rail upward, to bow the truss rail and also assist in holding everything tight.

Another peculiar feature is that the connecting member which bears the stresses, is attached to one part of the rail only—the bottom—and not to two parts, as in the case of a fish plate, where it is, in effect, attached to the top and to the bottom. Being attached to the bottom only, it is possible to raise the more severely worn rail any amount required. When this is done, the old fish plates are reversed from side to side, so that the notches worn in them will fit under the head of the rail that is not lifted. When being bolted on in such a case, the bolts are not drawn up as tight as possible, otherwise one of the rails might be lifted off the pillow block, and the whole value of the trussed joint would be lost. For this reason it would seem better, where possible, to use other old fish plates, which are too small for the rail, or to provide plain flat bars of such width as to touch the web of the rail only. Such fish plates or bars are only required to hold the rails in line, as they carry none of the weight at all.

One very considerable advantage is that the same clips are used to make joints for any rail from 60 lbs. on up to 100 lb. and might be used on even heavier rail, although this has not been tried. The clip is so designed that the points will bend just enough to fit any angle the base of the rail may have, without weakening the yokes of the clip. They are used to make combination joints between rails of different sections, by shaping the shims and pillow blocks accordingly. This has been done effectively when 60 lb. 4½ in. rail was joined to 80 lb. 7 in. rail and is done in all cases where T rail is joined to the girder guard section of special work. No drilling is required for this joint, no special tools are necessary, and all the parts may be used over and over. This is quite an advantage, where it may be desired to effectively patch up an old track, which may have to be renewed in a few years on account of street paving.

One very effective use to which the same clip and mechanical principal have been put is in the reclaiming, for much continued service, of broken and worn railway crossings. Truss rails from the scrap pile are put under the street railway rails, and between the ties of the railway long enough to extend under all the joints. The bases of the guard, and of the easier rails, are cut away with an ascetylene torch, where it is desired to attach the clips to the base of the running rail. When the pillow blocks and the clip are placed so as to bind the several pieces of the running rail to the truss rail, the latter holds them as level and as rigid as in a new diamond. Two 60 lb. diamonds, crossing an industrial siding, were repaired in this way three years ago and then paved with brick. They have held so firmly that the bricks have not yet shaken loose, although single track street cars very frequently cross at full speed. Several new diamonds have been built by the London St. Ry. on this principal; two of them for crossing the G. T. R. main lines. In these two diamonds, 6 in. beam diamonds were made to take the place of the truss rail so that the steam railway rails would be held rigid, to prevent breaking where the street railway flangeways are cut. A feature of such diamonds is that when the steam railway rails become too badly pounded at these flangeways they may be readily replaced without having to renew the whole diamond.

When experimenting with these trussed joints some difficulty was found, due to breaking of the clips, but finally The William Kennedy & Sons, Ltd., Owen Sound, Ont., who make the clips for the London Street Ry., succeeded in getting such a steel mixture for them that they are now amply strong and reliable. Shop tests showed a pressure of 25 tons, necessary to have any effect upon such a joint, and successful test joints on 100 lb. rail under heavy steam railway freight traffic seemed sufficient proof of strength. Experimental joints put in three years ago showed no signs of loosening, so this method of repairing joints was adopted for this season's work, when over 5,000 clips have been used without any breakages.



Trussed Rail Joint, London Street Railway.

Top row: No. 1. Straight or level trussed joint on new 80 lb. T rail. No. 2. Combination trussed joint, using 80 lb. T rail and 6 in. guard section.
Middle row. No. 3. New diamond, reinforced with truss rail and cast steel clips; 7 in. 80 lb. rail. No. 4. Loose and bent joint, 100 lb. T. rail, in main line, and under heavy railway service.
Lower row. No. 5. Same joint as shown in photograph 4, after being lifted with a trussed joint. No. 6. Broken and loose 60 lb. diamonds, still good three years after being reinforced with truss rail and steel clips and paved.

The British Columbia Electric Railway's Position.

Geo. Kidd, General Manager, British Columbia Electric Ry., is reported to have said in a recent interview: "The company is in the peculiar position of having an increase in gross revenue, but a decrease in net revenue. Our traffic figures show that there are more people in the city. We carried 318,228 more persons in June this year on our city lines than in July, 1916, and 376,487 more persons in August than in the same month last year, over the same lines. This extra traffic increased our revenue, of course, but our expenses went up at even a higher rate."

Mr. Kidd pointed out that this anomalous condition, while existing for some time, has been especially noticeable since the recent strike, when the wages of all the company's street railway employes were increased materially. Together with wages, the increased cost of materials has made a much greater increase in operating expenses than the increased revenue which the company has received as a result of the slight betterment of conditions generally throughout the city. Unless some relief is afforded the company from the constantly accumulating deficit, as well as the continual increase in the cost of operating by the rise in the prices of labor and materials, has nothing but bankruptcy staring it in the face.

Electric Railway Projects, Construction, Betterments, Etc.

The British Columbia Electric Ry. is relaying with new and heavier rails its tracks on Main St., Vancouver, between Seventh Ave. and Broadway. The estimated cost of this piece of work is $6,000. (Sept., pg. 368.)

Guelph Radial Ry.—See Toronto Suburban Ry.

The Niagara, St. Catharines & Toronto Ry. has practically completed re-railing and rebonding its local line at Niagara Falls, Ont., from the Roman Catholic Church to Montrose, about 4½ miles. The portion of the line from the Roman Catholic Church to Bridge St. is already laid with 80 lb. T rails and 90 lb. girder rail in pavement.

Port Arthur Civic Ry.—We are officially advised that it is proposed to build a waiting room and shelter at the terminus. M. M. Inglis, Port Arthur, Ont., is Manager.

The Public Utilities Commission is reported to have let a contract to Stewart & McKenzie, Fort William, for the reconstruction of the McIntyre River bridge at an approximate cost of $2,890. It is said that two bridges of Biritish Columbia fir will be built, one for each track of the civic railway, taking the place of the present bridge, which is inadequate. (Oct., pg. 407.)

Quebec Ry., Light & Power Co.—At a recent meeting of the Quebec City Council the City Engineer reported that the extension of the line on St. Valier St. had been completed across the C.P.R., and was ready for the inspection by the Board of Railway Commissioners' engineers. The contract called for the putting in operation of this piece of line by Dec. 31, 1916, but work was delayed. The proposed extension of the Belvidere line to Bells Hill and to a junction with the St. Valier St. line has not yet been started. The contract calls for its completion by Sept. 1, 1918. (Feb., pg. 73.)

Sandwich, Windsor & Amherstburg Ry.—The extension of Ottawa St., authorized to be built under the bylaw approved by Walkerville, Ont., ratepayers, recently, will be about 2,000 ft. long. It will be of single track, standard construction, and will be laid with 60 lb. rails. Jas. Anderson is Manager, Windsor, Ont. (Oct., pg. 407.)

Toronto Civic Ry.—We are officially advised that work was started, Sept. 28, on half a mile of single track extension on the Bloor St. route, from the present Quebec Ave. terminus to Runnymede Road. The track will be laid with 56 lb. rails and ballasted with gravel. (Aug., pg. 324.)

Toronto & York Radial Ry.—A Board of Railway Commissioners' engineers inspected recently the site of the piece of track in Aurora, Ont., to connect the T. & Y.R.R.'s Metropolitan Division and the Grand Trunk Ry. The cost is estimated at $4,000. (Jan., pg. 31.)

Toronto Suburban Ry.—A press report states that a draft agreement between the T.S.R. and the Guelph Radial Ry. has been drawn up respecting the installation of a service between the city and the military hospital located on the old prison farm. The company's present station is halfway between the city and the Agricultural College, and it is desired to secure better facilities. The report says that the agreement provides that the T.S.R. shall be allowed to run its cars along the city line to almost in front of the Royal Hotel, opposite the G.T.R. station. In return for this privilege it will be willing to allow the G.R.R. to run cars on the T.S.R. tracks to the Military Hospital. (May, pg. 203.)

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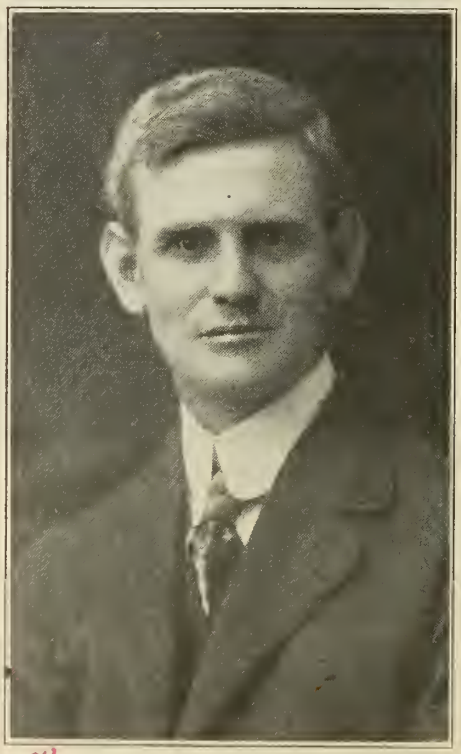
Martin Milne Todd
President, Galt, Preston & Hespeler St. Ry., and Vice President, Lake Erie & Northern Ry.



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Matthew W. Kirkwood
General Manager, Galt, Preston & Hespeler St. Ry. and Lake Erie & Northern Ry.

Toronto & York Radial Ry. officials have been making a general study of the operation of the Mimico Division, between Toronto and Port Credit, Ont., and propose to make a number of improvements in a short time. The company has its own power station, in temporary quarters, at the corner of Queen St. and the Lake Shore Road, Humber Bay, and secures power from the Toronto Power Co. The improvements contemplated will include a bettre distribution of power by the re-location of the power station, but its new site has not been determined. It is also proposed to lay additional tracks to permit a closer headway than the present 20 minutes service. At the request of Port Credit municipality, a siding will be built off the highway at the terminus so that cars may stand clear of the Lake Shore oRad. This will entail additional trackage of about 500 ft.

Galt, Preston & Hespeler St. Ry. and Lake Erie & Northern Ry. Officials.

Consequent on the death of Martin N. Todd, President, Galt, Preston & Hespeler St. Ry., and General Manager, Lake Erie & Northern Ry., several changes have been made in the officials of the above mentioned electric railways, the present organization being as follows:

Galt, Preston & Hespeler St. Ry., President, M. Milne Todd; General Manager, M. W. Kirkwood; Secretary-Treasurer, W. H. Lutz; General Freight and Passenger Agent, C. J. Whitney; Resident Engineer, F. H. Midgley, all at Galt, Ont.; Purchasing Agent and Storekeeper, F. Darnley; Roadmaster, J. Deans, both at Preston, Ont.

Lake Erie & Northern Ry., President, E. W. Beatty, Montreal; Vice President, M. Milne Todd, Galt, Ont.; General Manager, M. W. Kirkwood, Galt; Secretary-Treasurer, Lloyd Harris, Brantford, Ont.; Asst. Secretary-Treasurer, W. H. Lutz, Galt; General Freight and Passenger Agent, C. J. Whitney, Galt; Purchasing Agent and Storekeeper, F. Darnley, Preston, Ont.; Resident Engineer, F. H. Midgley, Galt; General Foreman, J. J. Morissey, Brantford; Chief Dispatcher, H. G. Davidson, Galt.

The London and Lake Erie Railway and Transportation Co's Position.

A conference between representatives of the bondholders and of the municipalities through which this railway runs was held at St. Thomas, Ont., Oct. 10. As the result of the deliberations the ratepayers of the several municipalities are being asked as to how far they are prepared to go to assist in maintaining the operation of the line. The people of St. Thomas are desirous of operation being continued and the other municipalities affect to be inclined to be favorable to this view if suitable terms can be arranged. The City of London is not undesirous of taking over the line from London to Talbotville, as that section serves a different community from that served by the London & Port Stanley Ry. The London Railway Commission has advised against the proposition that the city should take over the company's bonds at 60c on the dollar.

A St. Thomas press dispatch of Oct. 18 says: At a meeting here to-night of representatives of municipalities through which the L. & L. E. T. Co.'s line runs, it was pointed out by the management that operating expenses were approximately $12,000 a year in excess of revenue, and for this reason the road would have to be closed unless financial aid was forthcoming. Representatives of St. Thomas, Port Stanley, Yarmouth and Westminster

were agreeable to making a grant divided proportionately among the municipalities to cover the deficit in the proceeds of five years, at the end of which time it was hoped some other solution of the difficulty could be found. London's representatives were non-committal, believing that a road which runs in competition with London's own line, the London & Port Stanley Ry., would never pay if operated as at present. Another meeting will be called in a few days, when President Wood's answer to the municipalities' proposal is received.

Electric Railway Finance, Meetings Etc.

British Columbia Electric Ry.:

	Aug. 1917	Aug. 1916	2 mths. to Aug.31,'17	2 mths. to Aug.31,'16
Gross . .	$454,425	$423,738	$892,803	$835,585
Exp. . .	396,168	349,604	776,222	698,251
Net . . .	58,257	74,134	116,581	137,334

Cape Breton Electric Co.—

	Aug. 1917	Aug. 1916	2 mths. to Aug.31,'17	2 mths. to Aug.31,'16
Gross .	$39,683.58	$35,264.46	$80,184.29	$68,123.37
Exp. .	26,667.13	19,184.77	51,960.40	38,356.07
Net . .	13,016.45	16,079.69	28,223.89	29,767.30

Edmonton Radial Ry.—In a report issued by the City Commissioner, Oct. 14, it was stated that the deficit shown by the railway for the eight months ended Aug. 31 was $11,524.35, against $79,042.03 for the same period of 1916.

Regina Municipal Ry.:

	Sept.1917	Sept.1916	9 mths. to Sept.30,'17
Revenue	$17,185.62	$14,742.46	$169,206.81
Operating	15,112.93	13,737.96	145,896.01
Fixed charges .	8,005.56	8,022.96	72,050.02
Deficit	5,932.87	6,977.15	48,739.22

At a meeting of the Regina, Sask., City Council, Oct. 16, it was reported that the loss on the operation of the Regina Municipal Ry. for the nine months ended Sept. 30 was $48,958.95. The estimated loss for the whole year is $55,874.76.

Toronto Ry., Toronto & York Radial Ry. and allied companies:

	Aug. 1917	Aug. 1916	8 mths. to Aug.31,'17	8 mths. to Aug.31,'16
Gross	$1,039,819	$889,241	$7,867,595	$7,092,229
Exp. . .	591,013	462,179	4,172,715	3,634,674
Net . .	448,806	427,062	3,694,880	3,457,555

Toronto Civic Ry.—Revenue for September, $24,029.23; passengers carried, 1,426,775.

Winnipeg Electric Ry.—The net earnings for August were $39,457, against $85,935 for Aug. 1916. From Jan. 1 to Aug. 31, the net earnings were $506,701 against $791,030 for same period 1916.

	Aug. 1917	Aug. 1916	8 mths. to Aug.31,'17	8 mths. to Aug.31,'16
Gross .	$248,457	$249,795	$2,164,624	$2,193,057
Exp. . .	209,000	163,860	1,657,923	1,402,927
Net . . .	39,457	85,935	506,701	791,030

Toronto Civic Ry. Wages.—The Toronto City Council has adopted the Board of Control's recommendation that the following scale of wages, based on the finding of the board of conciliation in the recent Toronto Ry. strike, be paid to civic railway employes, as from June 16: Motormen, conductors and motor and truck repair men, first six months, to apply only to me nemployed after this date, 30c an hour; second six months, 32c; second year, 35c; third and subsequent years, 37c; shed men, foremen, 37c; operating shed men, men doing general shed work, 33c; shed men, men doing general shed work but not operating cars, 32c; car cleaners, 31c. Motormen and conductors engaged in train work on Sundays, 4c an hour platform time in excess of weekday rates. Emergency crews of motor and truck repair men to receive time and one-fifth.

Mainly About Electric Railway People.

C. C. **Weldon** has been appointed Superintendent, International Transit Co., Sault Ste. Marie, Ont., vice J. Summerhayes resigned.

D. W. Houston, Superintendent, Regina Municipal Ry., Regina, Sask., has been elected an associate member of the Canadian Society of Civil Engineers.

Geoffrey Porter, who has resigned from the position of Chief Electrical Engineer, British Columbia Ry., Vancouver, was presented recently with a mantel clock by the staff. It is his intention to take up private practice as advising and contracting engineer, but in the meantime he is visiting Japan, with a view to establishing connections there.

Owing to the resignation of G. Porter, Chief Electrical Engineer, British Columbia Electric Ry., there has been some rearrangement of duties, as it is not the Company's intention to make an appointment to that position at present. W. M. **Fraser,** Electrical Superintendent, has been given full charge of the operating end of the business, and F. S. **Easton,** Hydro-Electric Engineer, has been given full charge of the power producing plants, both with offices at Vancouver.

P. 512. A. W. McLimont
General Manager, Winnipeg Electric Railway

Martin Milne Todd, whose appointment as President, Galt, Preston and Hespeler St. Ry., and Vice President, Lake Erie and Northern Ry., Galt, Ont., was announced in our last issue, and whose portrait appears in this issue, was born there, July 22, 1891. He graduated from McGill University with the degree of B.Sc. in May, 1915, and was from June 1 to Dec. 31, 1915, Assistant Electrical Engineer, Lake Erie and Northern Ry., Preston, Ont.; Jan. 1, 1916, to Aug. 31, 1917, Assistant Superintendent, Galt, Preston and Hespeler St. Ry., and Lake Erie and Northern Ry., Preston, Ont.

A. W. McLimont, whose appointment as General Manager, Winnipeg Electric Ry., Winnipeg, was announced in our last issue, was born in Quebec, Que., and after leaving high school, was for some time in the Bell Telephone Co.'s service. He was subsequently Electrical Engineer for the Public Service Commission of the First District, New York, N.Y.; Vice President and General Manager, Michigan United Rys.; General Manager and Treasurer, Chicago and Milwaukee Rd.; Vice President and General Manager, San Francisco-Oakland Terminal Ry., and Vice President and General Manager, Georgia Power Co. He has also served for the General Electric Co. in the construction and operation of electric systems in Brazil, the Argentine Republic, Peru, Costa Rica and Mexico.

Wilford Phillips, whose retirement from the position of General Manager, Winnipeg Electric Ry., was announced in our last issue, has been elected a director of the company. Sir Augustus Nanton, Vice President, said recently: "Everybody connected with the company will regret Mr. Phillips' retirement. He remains in office at the board's request and will stay with the company in an advisory capacity. He came to Winnipeg about seventeen years ago from the Niagara Falls Park & River Ry., which he had managed with success, and to him is very largely due the past great successes of the Winnipeg Electric Ry. in all its branches. He extended the railway lines, completed its power plant, built substations, built a suburban line, extended its gas mains—in fact, the company's properties when he arrived were of a minor character and have all been developed under his management."

Edmonton and Regina Municipal Railway Deficits.

The Regina, Sask., Leader says: "The Edmonton municipal street railway is in a pretty bad way, according to the Bulletin, of that city. The system is carrying 25,000 passengers a day, and losing one cent on each passenger it carries. If the number of passengers per day could be increased to 35,000, it is estimated the railway would break even, but this is not regarded as possible while war conditions continue. The Bulletin says the unpleasant alternatives are, to raise the rates, to cut down expenditure by cutting down service, or to go on ignoring the sinking fund which should be put aside to meet the bonds. It urges the taking of definite steps to make the system a self-sustaining business proposition, declaring 'a city with millions of back taxes cannot afford to run chances on the indefinite continuance of a loss of $250 a day on its street railway system.'

"While Regina's showing is bad enough, it is not as bad as Edmonton's. According to figures submitted to the city council recently and certified to by the auditors, Regina's street railway loss for the nine months ended Sept. 30 was $48,958, or an average loss of about $180 a day."

Transportation of Postmen in Cape Breton.—Following the Nova Scotia Board of Public Utilities' decision forbidding the Cape Breton Electric Co. to sell tickets for postmen at reduced rates, on the ground that it was contrary to the company's act of incorporation and the Public Utilties Act, the company ceased to accept such tickets on Aug. 27 and took over from the Sydney postmaster those he had on hand unused. The postmen are now paying regular fares, the same as any other passengers.

Electric Railway Notes.

The Kingston, Portsmouth & Cataraqui Electric Ry. is employing some women conductors.

The Cornwall St. Ry., Light & Power Co., Cornwall, Ont., is said to be in the market for some cars.

The Vancouver Board of Trade is urging the British Columbia Government to appoint a public utilities commission.

The Ottawa Electric Ry. is reported to have carried 750,000 persons during the six days of the Central Canada Exhibition, 25,000 more than in 1916.

A board of conciliation is reported to have been appointed to arbitrate in a wages dispute between the International Transit Co., Sault Ste. Marie, and its employes.

The Montreal & Southern Counties Ry. has received one trailer car from Ottawa Car Manufacturing Co., completing the order for three, which were fully described and illustrated in our last issue.

The Niagara, St. Cathraines & Toronto Ry. has, at the request of the Niagara Falls, Ont., City Council, put into effect nearside stops on its line in that city, between the Roman Catholic Church and Bridge St.

The Quebec Public Utilities Commission is hearing an application of the City of Montreal to compel the Montreal Tramways Co., the Montreal Public Service Corporation and other companies to bury all their lighting wires underground in District No. 4, Montreal.

Sir Lomer Gouin, Premier of Quebec, is reported to have stated recently that the commission appointed to draft a new franchise agreement for the Montreal Tramways Co. would probably complete its work before the legislature's next session.

F. Ford, K.C., has been appointed to represent the Edmonton Radial Ry, H. A. Mackie to represent the railway's employes, and Mr. Justice McCarthy has been chosen as chairman of the conciliation board to arbitrate between the railway and its employes on wages and other matters in dispute.

At the meeting of the Edmonton, Alta., City Commissioners, at which a new schedule for the Edmonton Radial Ry. was adopted, it was reported that during August the expenses were 6c per passenger and that in order to pay expenses at even a 5c fare the railway would have to carry 33,808 passengers a day.

The Moose Jaw, Sask., Electric Ry. is desirous of adopting one-man cars. The Saskatchewan Legislature is to be asked to amend one of the sections of the Railway Act, which requires that there shall be a motorman and a conductor in charge of each car. The Moose Jaw City Council will consider the matter of petitioning the legislature in support of the amendment.

The British Columbia Electric Ry. has resumed its technical classes in Vancouver for the instruction of its employes. The classes are in charge of J. G. Lester, a graduate of the Imperial College of Technology, London, Eng., who has acted as instructor since the company inaugurated the plan of providing a technical training for its employes.

The Calgary, Alta.. City Council has adopted a resolution endorsing the operation of one-man cars on the Calgary Municipal Ry. by a majority of eight to one. This was in conformity with the recommendation of a special committee which investigated the matter, the report of which appeared in Canadian Railway and Marine World for October, pg. 403.

The London Street Ry.'s 38 conductors planted with potatoes nine acres of land, the use of which was granted them by the company, and have secured a crop of about 800 bags. The men invested about $7.50 each, besides their time, and have secured in addition to their own winter's supply of potatoes, a handsome return upon their investment.

The British Columbia Electric Ry. is reported to have under consideration the adoption of one-man cars on certain routes. The employes' representatives state that they will not discuss the matter until after the report of Adam Shortt on the transportation situation in Vancouver, Victoria and New Westminster has been received and considered.

The British Columbia Electric Ry.'s weekly sheet, the Buzzer, had an article recently on the abuse of transfers. It is pointed out that too many passengers on the city cars take the first car that comes along in the general direction in which they are going and demand a transfer, with the result that excessive use of transfers tends to delay the whole system as well as saddling a certain amount of needless expense upon the company. The wholesale demand for transfers, it is added, reduces the average fare for the city and suburban lines to about 3½c.

The Edmonton Radial Ry. put a new car schedule in operation Oct. 17. The important feature of the schedule is that a one-man car belt line will be operated, commencing at 111th Ave. and 95th St., travelling south on 95th St., west on Jasper Ave. to 101st St., then north and west on 107th Ave. to 124th St., then south and east on Jasper Ave. and north to 111th Ave., via 101st St. The service on this route will be operated by eight cars. One-man cars will be operated on the Highlands to Bonnie Doon line, and on the Calder-114th Ave. line. In announcing the new schedule the managements asks the co-operation of the public to make the movement a success. Passengers are asked to have the exact amount of their fare ready when boarding cars and to ask for transfers only at point of intersection. The new schedule is estimated to save about $90 a day in wages.

Quebec Ry. Light, Heat and Power Co's Annual Report.

The following are extracts from the report for the year ended June 30: The gross earnings from operation were $1,832,031.93, compared with $1,731,732.49 in 1915-16. Adding miscellaneous income of $230,850.80, makes total revenue from all sources $2,062,882.73, an increase of $94,281.31. The operating and maintenance expenses were $1,155,969.25 compared with $1,029,750.96 in 1915-1916. The fixed charges and taxes were $706,326.28, leaving a net surplus of $200,587.20. After making provision for obsolete cars on Montmorency and City St. Ry. Divisions, discount account, etc., there remains a total at credit of surplus account, to date, of $684,572.49.

The properties and plant of the company and its various subsidiary companies have been maintained in the same high state of efficiency as herettofore, as evidence of which there was expended during the year on maintenance accounts $226,366.07. During the year there was expended on capital account $302,663.63.

It is with feelings of deep regret that your directors have to report the death on July 4, of H. G. Matthews, General Manager. They also regret to announce the death in Dec., 1916, of Hon. Robert Mackay, who had been a director of the company since its organization. At a meeting of the directors on July 18, W. J. Lynch, Treasurer and Comptroller, was appointed General Manager. The directors desire to express their appreciation of the efficient services rendered by the officials and staff.

The directors were re-elected, T. J. Donohue being added to the board, which is now composed as follows: President, Sir Rodolphe Forget; Vice President, L. C. Webster; other directors, C. Donohue, T. J. Donohue, P. Galibert, C. A. Lavigne, L. G. Morin, Arthur Picard, and L. J. Tarte. The other officers are W. J. Lynch, General Manager; Arthur Lemoine, Secretary; and R. A. Wilson, Treasurer.

Protection of Highway Crossings by Toronto Suburban Railway.

The Ontario Railway and Municipal Board had under consideration, recently, several complaints alleging danger at crossings of highways on the Toronto Suburban Ry.'s extension from Lambton to Guelph, Ont., and had the same inspected by its Vice Chairman, A. B. Ingram, and by its engineer, as a result of which it issued the following orders:

Level crossing on Dundas St., on hill above Lambton: Each eastbound car to slow down to not more than 5 miles an hour until past the crossing. A red light to be hung by the company over the centre of the highway to warn vehicles after dark. The light to be so hung that it can be seen by the motormen of eastbound cars, to warn them to slow down speed as directed.

Canning Ave. crossing, Islington, stop 8: Each car to come to a dead stop. Every eastbound car to be under complete control while crossing the highway. A red light to be suspended by the company at night so as to be seen by persons using the highway and by all motormen.

Crossing on Dundas St., at Islington, stop 9: Each car to come to a dead stop at this place, and each car to be under control when crossing the highway. A red light to be displayed as at stop 8.

Crossing on Centre Road, stop 7, near Hickey Farm: The bank at the northwest corner of the highway and railway right of way to be cut away and the trees removed to near the telegraph pole about 100 ft. north of the crossing, to the satisfaction of the board's engineer.

Dixie Crossing, stop 23: The speed of every car to be reduced when crossing the highway and every car to be under control.

Timber to be cut down on portions of s.w. ½ and n.w. ½, Lot 31, Concession 7, Nassagawaya Tp., and in n.e. ½, Lot 19, Concession 7, Esquesing Tp., so as to give a clearer view of the railway and prevent accidents.

Postmen's transportation in St. John, N.B.—The Post Office Department having refused to pay the bulk sum asked by the New Brunswick Power Co. for carrying postmen on its cars, the postmen in St. John are now travelling on tickets, paying the same rate of fare as ordinary passengers.

Marine Department

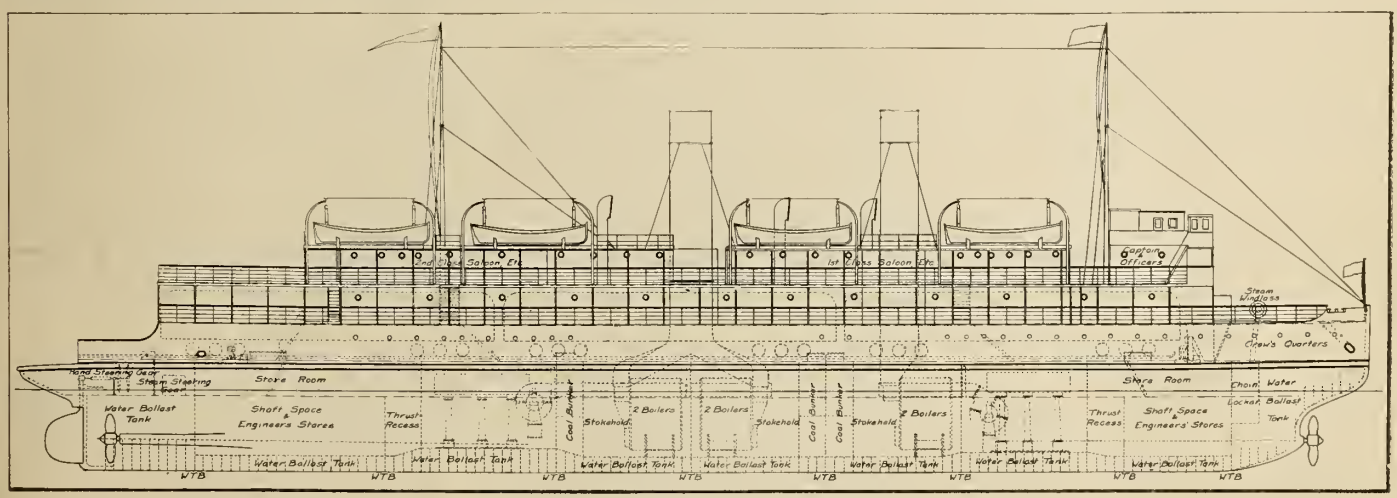
The Prince Edward Island Car Ferry and its Terminals.

The car ferry service between New Brunswick, on the mainland, and Prince Edward Island, was placed in operation, Oct. 16. This marks the completion of an important work in connection with the improvement of the communication with the Island province, a matter which has been the subject of continual agitation ever since the island entered Confederation. Even before that date there had been projects under consideration to make connection either by means of a tunnel or bridge. The latter project did not command any serious measure of support, but that for the boring of a tunnel is not without its advocates even today. The principal means of communication between the island and the mainland during the summer is by means of steamships running between Summerside, P.E.I., and Point du Chene, N.B., and between Charlottetown, P.E.I., and Pictou, N.S. During the winter steamships have run between Charlottetown and Pictou, and when Charlottetown was inaccessible on account of ice, they have run between Georgetown, P.E.I., and Pictou. When ice has prevented the steamships operating mails and some passengers have been conveyed in open boats over the ice and through the stretches of open water between Cape Traverse, P.E.I., and Cape Tormentine, N.B., the narrowest part of Northumberland Strait.

Car Ferry Steamship Prince Edward Island, Port Borden, P.E.I., to Cape Tormentine, N.B.

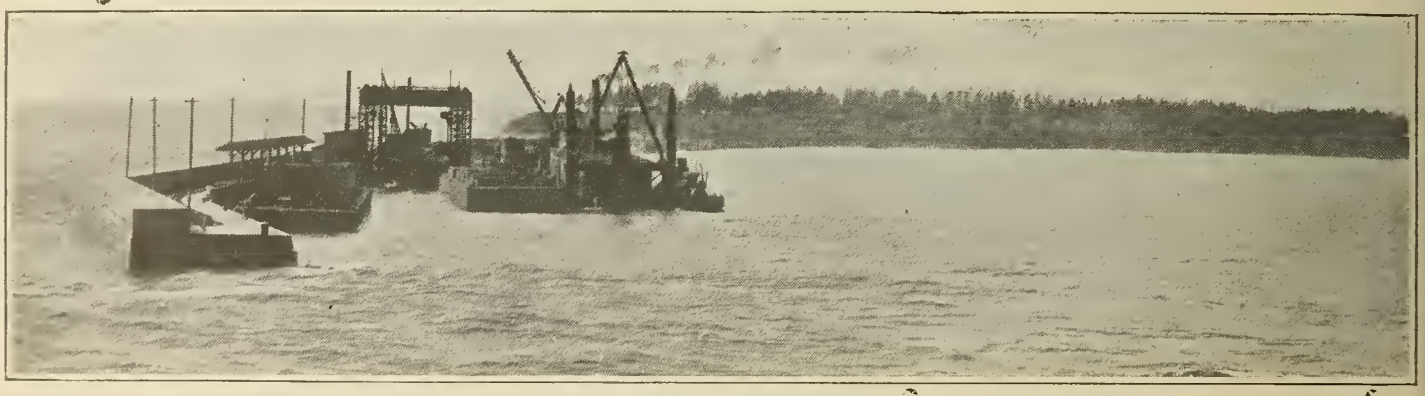
From 1900 onward the matter was discussed almost annually in parliament, but it was not until the end of 1911 that definite steps were taken. In December of that year the Premier announced that the Government had decided to construct a car ferry to be operated across the strait, and that the P.E.I. Ry. would be reconstructed as a standard gauge line, to permit of the interchange of traffic. In 1912 parliament voted $400,000 to provide a car ferry, etc. After an investigation of the whole situation it was decided to operate the car ferry between Carleton Point, P.E.I., since named Port Borden, and Cape Tormentine, N.B. When this had been decided upon plans were prepared for car ferry terminals and contracts for the work were let in June, 1913, the Cape Tormentine work being let to A. T. Mackie, Toronto, and the Prince Edward Island work to the Halifax Dredging Co. Subsequently the latter work was taken over by the Roger Miller Co. of Prince Edward Island, Ltd., of which Roger Miller, of Ingersoll, Ont., is President.

The work done at Port Borden under the contract includes the construction of a pier 2,240 ft. long and 25 ft. wide on the top inside the sea wall, at the outer side of which is the car ferry dock. This dock is composed of 9 concrete cribs, each 113 ft. long and weighing 2,500 tons, with 300 tons of steel in each for reinforcing. These cribs extend 22 ft. below low water mark and 13 ft. above. They rest on a foundation of rock, which had been levelled off to receive them. They were built



Car Ferry Steamship Prince Edward Island.

at Point du Chene, N.B., of cellular construction, some containing 27 pockets, others 30. After being towed over and placed in position, they were filled with concrete, thus making a solid mass. The core of the remainder of the pier is of stone, known as "quarry run." The slopes are laid with heavy Wallace stones, not less than five tons each, built to fit in with one another. These stones were laid by means of a cable-way, being handled by an endless chain, between two towers, one on the pier and the other on the bank, about 1,500 ft. apart. The pier is of curving formation, and has a J termination, the hollow part of which forms a dock for the steamer. In order to prevent the boat from being damaged by coming into contact with the concrete, an automatic fender, designed by the Roger Miller Co., was built. This is composed of vertical piles, with their steel points driven into the rock. These piles are set in pairs. between them timbers are set lengthwise, and there are a number of other piles built in to strengthen the structure. There are 64 plungers altogether, fitting into a pipe and resting against clustered car springs. By means of these springs, the compression of the boat is taken up, and 100 tons of pressure



Car Ferry Terminal, Port Borden, P.E.I.

will close the springs up a foot.

The cars are taken on and off the car ferry by means of a large steel tranfer bridge or apron built by the Dominion Bridge Co., which has six large gantries with an apron girder suspended from the top. The apron is in three sections, the outer one of which rests on top of the steamship's stern. By means of counterweights, the structure is so balanced that it can be hoisted or lowered by a small steam engine to suit any condition of the tide.

The breakwater, also built by the Roger Miller Co., is situated to the eastward on a pier, and affords protection from the east winds. It is 585 ft. long and 110 ft. at the bottom, tapering to 18 ft. at the top. Before operations were started there was no harbor, and a new one had to be created. An area of 750,000 sq. ft. was dredged to a depth of 20 ft.

The work at Cape Tormentine consists of a landing slip, with apron, composed of 330 ft. of double row pile fender work, with protection work of 12 timber cribs of close faced cribbing. The old pier has been widened by the construction of additional cribs.

The car ferry was built from special designs by Armstrong, Whitworth & Co., Ltd,, Newcastle-on-Tyne, Eng. The general dimensions are: Length, 300 ft. over fenders, 285 ft. between perpendiculars; breadth, 53 ft. 10 in. over fenders, moulded at deck, 52 ft.; depth, moulded, 24 ft.; mean draft when laden, 18 ft. She is driven by three sets of triple expansion engines, driving two screws at the stern and the third driving another at the bow. A full description of the vessel and her machinery, with illustrations, was given in Canadian Railway and Marine World for November, 1914, pg. 518.

In order to provide direct connection with the Intercolonial Ry., the New Brunswick & Prince Edward Island Ry., extending from Sackville to Cape Tormentine, N.B., 38 miles, was acquired by the Dominion Government, under the authority of an act to acquire by lease or otherwise branch lines for the Intercolonial Ry. A considerable sum has been expended upon the line to bring it up to the standard necessary to carry the traffic. On Prince Edward Island, a short piece of both standard and narrow gauge line has been built between the car ferry slip and a point on the branch from Emerald Jct. The matter of rebuilding the P.E.I.R. as a standard gauge line is not expected to be taken up until the termination of the war. Meanwhile the standard gauge cars will be taken over on the car ferry, which can accommodate 6 passenger cars and 10 freight cars, and the freight will be transhipped to the narrow gauge cars at Port Borden. The cars will also be reloaded at Port Borden. As the vessel has ample passenger accommodation, there will be no necessity for taking passenger cars across until the P.E.I.R. gauge is changed.

The report of the first day's operations of the car ferry is as follows: "The first trip was made from Cape Tormentine to Port Borden, where she arrived at 11.05 with 12 I.C.R. cars, 6 loaded and 6 empty (equivalent to 24 P.E.I.R. cars). She was docked in 8 minutes. Discharged and loaded in 25 minutes and left at 12.15 with 12 I.C.R. cars of potatoes. She returned at 2.45, bringing 10 I.C.R. cars. Discharged and loaded with 12 I.C.R. cars of potatoes (equivalent to 25 P.E.I.R. cars) and left again for Cape Tormentine."

H. H. Grady, Summerside, P.E.I., is reported to have been appointed transfer agen t,and E. Crosby, of Cape Traverse, as station agent at Port Borden.

The Lake Carriers' Association has offered its fleet of bulk freight carriers for the training of inexperienced men for service for the U.S. merchant marine. It is provided that wages will be paid the men while training.

After-War Shipbuilding. — A British shipowning firm is reported to have placed a contract with one of the large shipbuilding companies in Great Britain, for the construction within a certain time of the close of the war, of a large steamship at a cost of £18 a ton deadweight.

Pure Drinking Water for Great Lakes Vessels.

In March the Secretary of the Treasury for the U.S. issued a circular to owners, agents and masters of vessels operating on the Great Lakes, providing that on and after the opening of navigation in 1917, it would be necessary to furnish on all such vessels water for drinking or culinary purposes, which, if not obtained ashore, must be treated by an approved method, and if obtained ashore, must be from an approved source, and all the piping system on board such vessels must be so arranged that no connection can be made between the drinking water system and any other water system, and an approved sign, reading, "Do not drink this water," must be placed at every tap or other outlet not connected with the drinking water system.

In addition to these regulations applying to all U.S. vessels, they were also applicable to any Canadian vessels operating to any U.S. port. The matter was taken up by the Dominion Marine Association, through the Marine Department, which had a number of vessels examined and came to the conclusion that it would be impossible to have the necessary alterations made in time for the opening of navigation. It was therefore arranged with the U.S. that the regulation be suspended so far as Canadian vessels were concerned, on the understanding that the changes be made and the regulations complied with by the opening of navigation in 1918. Steps are now being taken by the Canadian vessel owners to advise the Marine Department with reference to these regulations so that at the opening of navigation in 1918, they may comply with the U.S. requirements by providing the equipment on the same general lines as those adopted in the U.S., so that Canadian vessels entering U.S. ports will merely have to comply with the U.S. flag law.

British Seamen's Wages.—A London press cablegram, Oct. 9.—The Shipping Controller has decided to establish a standard wage for seamen, practically doubling the old rate. The preliminary decision fixes £11 for seaman on foreign going vessels, firemen receiving £11 10s. The rates of petty officers and stewards will be advanced in the same proportion. The rates of officers and engineers will also be reviewed immediately.

Lake Coal Shipments to U.S. ports during September were 3,413,932 tons, and to Canadian ports, 1,195,434 tons. About 3,000,000 tons were unloaded at Lake Superior ports and 926,063 at Lake Michigan ports.

Shipbuilding Activities Throughout Canada.

STEEL AND WOODEN STEAMSHIPS FOR BRITISH GOVERNMENT.

Engines for Wooden Steamships.—A contract is reported to have been awarded to Grant, Smith and Macdonnell Ltd., for the construction of a shed at Victoria, B.C., for housing and assembling the marine engine parts for the wooden steamships which are being built at various points in the Province for the Imperial Munitions Board. The shed is to be located on pier 2 and will be 703 x 200 ft., the walls being 22 ft. high under eaves and 29 ft. at the ridge, with an inside clearance of 16 ft. The building will be of wood, with complete arrangements for fire protection.

Foundation Co.—Planking operations were reported to be in progress at Victoria on hull no. 1, about the middle of October, and the steel keelsons were placed in two hulls. The ceilings of both vessels were well advanced and the stern and rudder posts in place and the counters in frame. Two other hulls are in frame and work is proceeding on the stem and stern post of hull no. 3. It is expected that the first hull will be launched in December.

Fraser Brace & Co., Montreal, are reported to have been awarded a contract by the Imperial Munitions Board, for the construction of four standard wooden steamships, at an approximate cost of $1,000,000. The company will, it is said, build the hulls only, at its yard on the south bank of the Lachine Canal between Atwater and Cote St. Paul bridges. Keels are stated to have been laid for two of these vessels, and the keels for the other two are expected to be laid early in November.

William Lyall Shipbuilding Co.—Four steamships are reported to be under way at this company's yards at North Vancouver. The ceiling has been started on one of them, and the second is fully framed. The keels of the other two are bolted and ready for the frames. Two other keels will be laid as soon as the necessary lumber is available, and then work will proceed simultaneouly on all six vessels.

The second steel steamship of the "War" series to be built in British Columbia, will probably be launched from J. Coughlan and Sons' yard at Vancouver, during November, and named War Champ.

Steel Steamships Ordered.—It was announced in Canadian Railway and Marine World for June that the Imperial Munitions Board had placed orders for the British Government, at various points between Montreal and Victoria, B.C., for building 26 steel steamships. Since then orders for 10 more have been placed, 4 of these during October. The tonnage of the steamships ordered runs from 1,800 tons to 8,800 tons dead weight capacity. Three steamships have already been delivered, leaving 33 to be delivered.

GENERAL SHIPBUILDING NOTES.

Bentley and Smith are reported to have reopened an old ship yard at Quaco, Nfld., and to have commenced wooden shipbuilding there.

Cameron-Genoa Mills Shipbuilders, Ltd.—Steel keelsons were placed in two wooden hulls during October, and considerable progress was made on hull no. 7. Hull no. 9 was in frame about the middle of the month and the keel sticks were in course of preparation for hull no. 10, it being anticipated that the keel would be laid in November.

Canada West Coast Navigation Co.'s last vessel of the schooner type was launched from the Wallace Shipyards, North Vancouver, Sept. 29, and named Marie Bernard. She is the sixth vessel of this type built at these yards for the same company. Owing to the difficulty of getting the auxiliary engines, it is likely that her first voyage will be made under sail.

Canadian Allis-Chalmers Ltd., a subsidiary of Canadian General Electric Co., Ltd., Toronto, is re-opening the shipbuilding yard, on the Niagara River, near Bridgeburg, Ont., which was established in the early nineties by Canadian Shipbuilding Co., Ltd., another subsidiary, and which went into liquidation some ten years ago, since which the yard has not been operated. A Angstrom, who managed Canadian Shipbuilding Co., and who has been Naval Architect, Canadian Northern Ry., for some time past, has been appointed Manager of Canadian Allis-Chalmers' shipbuilding department, which has a contract for four Welland Canal size steamships for ocean service.

The Collingwood Shipbuilding Co. launched two steam trawlers at Collingwood, Ont., Oct. 1. They are a portion of an order for six placed by J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, acting as Director of Naval Construction on behalf of the Naval Service Department. Orders have been placed at other yards for similar vessels, the Dominion Government having undertaken to have 36 of them built for service. They are of the regular North Sea trawler type. The dimensions are, length over all 135 ft., length between perpendiculars 125 ft., beam 23½ ft., depth 13½ ft. They are to be equipped with triple expansion engines, with cylinders 13¾, 21½ and 35 ins. diar., by 24 ins. stroke, of about 500 h.p., and steam will be furnished by one boiler 13½ x 10½ ft., at 180 lb. pressure. Accommodation is provided for a crew of 17. The Naval Service Department is supervising construction, and purchases the materials, including engines and other machinery, and supplies them to the builders. An illustrated description of similar vessels was given in Canadian Railway and Marine World for April.

Harrison and Lamond Shipbuilders, Ltd., a company which was incorporated recently with the view of taking over a contract made by Lamond and Harrison, with the Dominion Government for the construction of an auxiliary power schooner, but which was eventually cancelled, will, it is reported, amalgamate with the Pacific Construction Co., which was announced a short time ago to be building two wooden steamships at Coquitlam, B.C., for the Imperial Munitions Board. Harrison and Lamond Shipbuilders Ltd., are also stated to have a similar contract, and in addition to be negotiating with the Dominion Government for a contract on a cost and percentage basis.

W. R. Huntley & Sons, Parrsboro, N.S., launched the schooner Annie B. Anderson, Oct. 2, for Anderson and Tyrer, Sherbrooke, N.S. She is 142 ft. long, 35½ ft. beam and 13 ft, depth of hold, and of 460 tons register. The builders have laid a keel for another schooner for C. T. White and Son, Sussex, N.B. She will be 175 ft. long, 39 ft. beam and 17 ft. in the hold, and of about 800 tons register.

Shipbuilding Throughout Canada.—It is stated that there are 74 vessels of 126,000 tons, under construction in Canadian shipyards and that of these, 25 are being built on the Atlantic coast; 30 on the Great Lakes, and 19 on the Pacific coast.

The Steamship Tento on the Ways at Toronto, just prior to launching, Oct. 22.

The s.s. Tento Launched at Toronto.

The ocean going cargo s.s. Tento, built under Dominion Government license for Norwegian owners, but requisitioned for the British Government, was launched at the Polson Iron Works, Toronto, Oct. 22, being christened by Mrs. Refnes, wife of the Norwegian captain, who has been watching the construction. The vessel's principal dimensions are: Length over all, 261 ft.; length, b.p., 251 ft.; breadth moulded, 43½ ft.; depth moulded, 23 ft.; deadweight capacity, 2,500 tons; mean draught, 19½ ft.

The vessel is of the Frederickstad single deck type, built on the deep frame principle, with cellular double bottom all fore and aft, and peak tanks. There are 4 watertight bulkheads, 2 masts, and 6 steam winches, one at each mast and derrick. She is built of steel to class highest class Bureau Veritas for ocean service and will have steam and hand steering gear, electric light, evaporating outfit. The propelling machinery will consist of triple expansion engine, having cylinders 20½ and 33 and 54 in. x 36 in. stroke. She will have 2 Scotch marine type boilers, 14 ft. diam. by 12 ft. long, built for 180 lb. working pressure. She will be completed and delivered this autumn.

Wreck Commissioner's Investigations and Judgments.

Royal Transport-Korana Collision.

An investigation was held at Quebec, recently, into the cause of the collision between the steamships Royal Transport and Korana in Quebec harbor, June 11, resulting in the beaching of the former vessel. Capt. L. A. Demers, Dominion Wreck Commissioner. presided, and was assisted by Commander E. G. O. Elliott, R.N.R., and Capt. C. Keonig, as nautical assessors. The evidence showed that at the time of the collision, both vessels had pilots aboard, and in each case they were on the bridge with the master. The pilot of the Royal Transport, A. Lachance, was given the privilege of giving his evidence and of being examined in French, but he preferred being questioned in English. In the course of his evidence, the court considered it advisable that he be examined in French, but his examination proved impossible in French, and so inconsistent with his first statements, and as his words could not be given the meaning in the interpretation that they implied, an adjournment was made to permit of his direct examination in French. On the resumption, he was recalled and examined in French, but the court found that it was useless to make an analysis of his statements as they differed materially in cross examination, and the court became so exasperated that he was ordered to make a statement without interruption. The evidence of the pilot was such that the court wondered which of the four different statements could be accepted as plausible. He mistook the Korana's light for another, and when he found his mistake, he attempted to cross her bows, which is in violation of articles 19 and 25 of the rules of the road. The unintelligent manner in which he gave his evidence, with the discrepancies in various statements, led the court to doubt whether he sounded a two blast signal as he stated. He also attempted to lead the court to think that lights could not be seen at any distance, but this was disproved by Pilot Angers, of the orana, and other witnesses. Another point in dealing with Lachance's evidence astonished the court, which was his aparent gross ignorance of the chart. The plotting of the point of collision inside of Beaufort Flat, and again close to the breakwater, are irrefutable proofs of his ignorance of a subject of paramount importance to his occupation. With such limited knowledge, it is is to be wondered at that he did not come to grief earlier.

Notwithstanding that there was a pilot aboard, the court felt that the master was responsible, and while having great sympathy with masters, under the conditions which they have to face at present, feared that a combination of laissez faire and confidence in the pilot sometimes causes a relaxation of that keen attention which must be the watchword of navigators. A serious collision occurred in a well lighted port, and sentiment must be put on one side. An indifferent lookout was kept on the Royal Transport, and had the pilot kept a proper lookout, he would have, in the transition from green to red on the orana, kept his course and shown his red to the Korana's red, as the latter was gradually going toward the centre of the channel on her course outward. The court, Commander Elliott dissenting, therefore found that the Royal Transport was solely to blame for the collision, and suspended the pilot, Arthur Lachance's, license for two years from June 21, and ordered that before he is again allowed to pilot, at the expiration of his suspension, he be examined on chart work. The master of the Royal Transport, W. C. Davidson, had his certificate suspended for one month from June 21, and the master and officers of the Korana an dall other officers were exonerated from all blame for the casualty.

Commander Elliott, in dissenting from the foregoing judgment, considered that both vessels were to blame, the Royal Transport being on her right side, and the Korana on her wrong side, and that an outgoing vessel, manoeuvering on the wrong side of the channel would be very bewildering to an incoming vessel. The collision was due to inefficient lookout on both vessels, accompanied by weather conditions, and partly by allowing custom to become law with the pilots, in keeping to the north side of the channel for changing pilots. This practice is strongly to be deprecated, as there is no reason why an outgoing vessel should do so. Regarding Pilot Lachance, he said: "This man is the result of a system which has granted licenses as fully qualified pilots on very elementary examinations . . . and I recommend that before being permitted to pilot again, he be examined before competent judges on a preliminary examination as to his capabilities, on account of the apparent lack of knowledge of anything beyond the rule of thumb." Commander Elliott also considered the pilot of the Korana should be censured for nt keeping to his own side of the channel, and that the masters of the Royal Transport and orana should be censured for not keeping a better lookout on their respective vessels, especially in view of the weather conditions prevailing on the night of the casualty.

Keybell-A. E. Ames Collision.

As the result of an investigation at Montreal, into the collision between the Keystone Transportation Co.'s s.s. Keybell and Canadian Northern Steamships' s.s. A. E. Ames, west of Point Peter in Lake Ontario, June 29, the Dominion Wreck Commissioner, Capt. L. A. Demers, has rendered judgment, concurred in by Capts. C. Lapierre and F. Nash, acting as nautical assessors. After hearing and examining the evidence, the court finds that whilst the collision is trifling from the point of damages, which is not the court's concern, it cannot arrive at any other conclusion than that the s.s. Keybell, by violation of article 19 regarding speed and bearing of sounds, invited the collision, therefore the master, George Bunting, certificate 6714, is found in default and his certificate is suspended for one year from July 30, 1917, for what the court declares to be a gross, wilful violation of the rules of the road, in force on the Great Lakes. The master and officers of the s.s. A. E. Ames are exonerated from blame. The logs of each vessel were kept in an unsatisfactory manner, especially that of the s.s. Keybell. The s.s. A. E. Ames did not comply with article 34, but is exonerated by article 37. The masters of both vessels evaded the provisions of sec. 920 of the Canada Shipping Act, leaving each other in the fog, without making enquiries, and therefore, both are guilty of misdemeanor. While the court holds the master of the s.s. A. E. Ames is not to blame for the collision, he is found in default for not obeying sec. 920 of the Canada Shipping Act, and consequently is severely reprimanded, and had the collision been of a more serious nature, his certificate would have been dealt with. The reprimand also to the master of the s.s. Keybell.

Heathcote-Kelbergen Collision.

An enquiry into the cause of the collision between the s.s. Heathcote and the s.s. Kelbergen, off the Newfoundland coast, July 25, whereby the s.s. Heathcote was lost, was held at Quebec, Aug. 21, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. C. Lapierre and F. Nash as nautical assessors. The court finds that the evidence was contradictory in regard to locality, differing in respect to climatic conditions and range of visibility, but that the Kelbergen is mostly to blame for the disaster. From the first hearing of the Heathcote's fog signal, the Kelbergen's duty was plain, according to article 16, and no excuse can be found for the casualty. In view of this the certificate, no 033,236 of the master, John Samuel Ledsone, is suspended for three months from August 3. For a violation of article 27, and for the observance of article 21, which did not apply in his case, the certificate, no. 024,009, of the master of the Heathcote, Andrew Dalrymple Muir, is suspended for one month from Aug. 3, and he is censured for not saving the ship's papers, log books, etc., during the time he was on board, prior to the vessel sinking, which the court considered ample. The first officer of the s.s. Kelbergen, George Gill, is severely censured for his indifference to the carrying out of his duties.

The court points out that the lenient sentence imposed on the master of the Kelbergen is due to the fact that he passed through a severe ordeal at an earlier part of the voyage, in combatting and evading an enemy submarine, and for this action, though not concerned in this casualty, the court praised his action in this respect, and owing to his bravery, the court regrets the suspension of the certificate, but the circumstances of the collision warrants it.

Stranding of s.s. Arigair.

At Halifax, N.S., before Capt. L. A. Demers, Dominion Wreck Commissioner, and Commander E. Wyatt, R.N.R., and Capt. C. Adam, as nautical assessors. The stranding occurred on Amherst Island, one of the Magdalen Islands, Aug. 28. The court states that the master of the Arigair, Capt. W. Mackintosh, made a very frank and straightforward statement, and did not try to hide any facts, but it felt in duty bound to censure him for not taking more soundings when certain distances had been run, and cautioned him that in future, when a distance has been run, it is a proper action to stop, sound and circle around, and that this is more necessary where an erratic current is known to exist.

Aranmore-Cyrene Collision.

At Charlottetown, P.E.I., Aug. 31, before Capt. L. A. Demers, Dominion Wreck Commissioner, and Capts. A. McLeod and J. Lumsdane, as nautical assessors. The casualty occurred in Pictou Narrows, at 27, and resulted in the sinking of the schooner Cyrene. The court, after reviewing the evidence, commented on the manly and straightforward statement of the master of the s.s. Aranmore, Capt. D.

M. MacDonald, but held him in default for daring and foolhardy navigation, bordering on carelessness, and suspended his certificate for nine months, from Sept. 1, 1917, to June 1, 1918. Regarding the schooner Cyrene, the master made a distinct breach of one of the rules of the road in changing her course when she should have kept, and the court found her partly to blame, but as the master has no certificate, he cannot be dealt with. The court added that the quartermaster of the s.s. Aranmore is unfit to be a member of the crew, declaring that if he did not see or hear anything when the casualty occurred, he is non compos menttis, and if he did hear and see what occurred, he should have given more satisfactory answers under examination.

Stranding of the s.s. Frankmere.

At Halifax, N.S., Sept. 11, before Capt. L. A. Demers, Dominion Wreck Commissioner, and Commander E. Wyatt, R.N.R., and Capt. A. Adams, as nautical assessors. The casualty occurred Aug. 8, on Erion Island, one of the Magdalen Islands, in the Gulf of St. Lawrence. The court found that there was a serious lack of judgment and prudence in navigation, for which, as there was an uncertificated offiecr in charge on the bridge at the time, the captain, D. T. Evans, must be held accountable. The court considered the straightforward statement made by him and the high reference made by his employers, and for these reasons did not deal with his certificate, but severely censured him and reprimanded him for injudicious navigation.

Celia-Katie D. Collision.

At Montreal, Aug. 18, before Capt. L. A. Deniers, Dominion Wreck Commissioner, and Capts. F. Nash and C. Lapierre, as nautical assessors. The collision between the British s.s. Celia and the barge Katie D., in tow of the steam tug J. H. Hackett, occurred Aug. 3, at Isle a la Pierre, in the River St. Lawrence. The court came to the conclusion that the s.s. Celia was alone to blame for the casualty through a wrong action and violation of local regulations. The vessel was in full charge of D. J. Perreault, pilot, whom the court found wanting in judgment and suspended his license for one month and ordered him to pay the costs of the investigation, and in addition fined him the maximum, $40, for a violation of the local regulations governing the particular place where the casualty occurred. The master and officers of the Cela were exonerated from blame. The expenses of the investigation were $160; the fine imposed, $40, and the cost of French evidence, $137; total to be paid by the pilot, $337.

The Stuart W. Collision with Barges.

At Montreal, Sept. 25, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. F. Nash and C. Lapierre, as nautical assessors. The Stuart W., which is owned by the Stuart W. Co., a subsidiary Company of Canada Shipping Co., Montreal, while down bound, July 20, collided with three barges in tow of the tug Sin-Mac, near McCoy Island in the St. Lawrence River. The court found that both vessels were to blame, the Stuart W. for breach of rules of the road 29, 37, and 38, and the Sin-Mac for rules 25, 29, 37 and 38. E. Tremblay, master of the Stuart W., was reprimanded for maintaining speed when danger was possible, and for not availing himself of the privileges of rule 25. The court found that the master of the Sin-Mac could not be held responsible for the casualty, as he was taking a well earned rest, leaving matters to the pilot. The breach of the rules therefore rests with the pilot, Leduc, who, as he possesses no license as such, was severely censured for his actions.

Stranding of s.s. S. V. Harkness.

At Montreal, Aug. 20, before Capt. L. A. Demers, Dominion Wreck Commissioner and Capts. F. Nash and C. Lapierre, as nautical assessors. The U.S. s.s. S. V. Harkness, built three months ago on the Pacific coast, while inward bound from Puget Sound with oil, stranded on Red Island in the River St. Lawrence, Aug. 23. She was in charge of pilot Adjutor Lachance, who, though notified to be present at the enquiry, failed to attend, sending a doctor's certificate as to his state of health. After hearing the evidence, the court decided that the pilot alone was to blame for an uncalled for casualty. Mental aberration was mentioned as an excuse for the mistakes made, but the court could not accept this alone, for at one time the pilot headed north right across the river, he maintained full speed through dense fog, and stopped the sounding of the vessel's whistle, on the indefensible ground that he would be unable to hear the fog signals. As the pilot's record was not above reproach, the court felt it its duty to cancel his license forthwith.

Atlantic Harbors and Canadian Export Trade.

In a discussion in the House of Commons recently on the estimates connected with harbor improvement work at St. John, N.B., some interesting information was given in regard to a possible transfer of the shipment of merchandise, etc., for war purposes, from Canadian ports to Portland, Me. During the debate, it was stated that the U.S. authorities had been informed that if they would dredge out Portland harbor to a depth of 35 ft. for larger vessels, the Canadian Government would, during the yar, avail itself of that harbor in connection with Canadian export trade. This matter was commented on by the British Ambassador at Washington, D.C., in correspondence with a U.S. senator, and a question was asked in the Senate as to the Ambassador's interference in a U.S. internal matter. The Ambassador, in his letter, is reported to have stated that he was authorized by the Canadian Government to say that if the Portland harbor is deepened to 35 ft., the government will use it for a large part of the winter trade. The Minister of Public Works said that the dredging of Portland harbor was entirelya U.S. Government matter, and he was unaware that there was any proposal to adopt Portland harbor as against St. John and Halifax. St. John harbor is being dredged to a depth of 32 ft. at low tide, and if it is necessary to go deeper, provision will be made and an additional depth of 3 ft. obtained. The Minister said that when he was in England recently, a proposal was made, that in case of rush orders, it might be convenient that some of the trade should be shipped through other ports than St. John or Halifax, especially during the winter; he had registered a strong objection to such a proposel, and he had not heard of it since. The matter had not been brought to his department's attention in any other way.

Another Power Dam Proposal for the St. Lawrence River.

It was announced by Montreal daily papers recently that a project has been quietly set going during the past few months for the organization of a company having for its main object the construction of a dam at the Coteau Rapids, in the St. Lawrence, for the purpose of power development. The Power Development Co., Ltd., was incorporated by Dominion letters patent in June, with a nominal capital stock of $500,000, and it is stated that preliminary steps were taken with the utmost secrecy, and that the promoters expected by about Oct. 22 to apply to the Dominion Government for the necessary authority to build a dam, with a lock for vessels to pass through.

Various schemes have been brought forward during the last few years, covering proposals to dam the St. Lawrence at different point, but, so far, all such projects have been stopped, owing to the strong opposition of the marine interests, and the Dominion Government's dictum that the interests concerned with the navigation of the St. Lawrence are paramount.

The Long Sault Power Development Co., a U.S. corporation, made a prolonged fight for permission to build a dam, without which its franchise was useless, and after strong Dominion representations, the U.S. authorities cancelled the franchise and finally disposed of the company's case.

The Beauharnois Light, Heat & Power Co. also planned to build a dam across the river, but has not been able to obtain the necessary permission. The matter was taken up by the Dominion Marine Association, which was assured by the Dominion Government that no steps will be taken in any such application until plans and proposals were submitted and the association permitted to make representations in the matter.

The present scheme provides for the construction of a power house, with a lock, and tail race embankment, about 200 ft. long, extending from the north shore a little west of Coteau du Lac, and a series of dams connecting the small islands to Clarkes Island. The incorporators of the company are employes of a legal firm in Montreal, which acts for certain interests associated with other power proposals.

The Mayor of Toronto, on Oct. 11, telegraphed the Dominion Premier in relation to the matter, urging that no steps be taken to grant the required permission without giving Ontario municipalities an opportunity of voicing their objection to any proposal which, it was claimed, would interfere with other power development schemes of the Hydro Electric Power Commission of Ontario. The Premier telegraphed in reply that there was no application for such a scheme before the government.

Dominion Government Shipyard at Sorel, Que.—A press report states that the Sorel shipyard, one of the oldest shipbuilding plants in Canada, has been acquired by the Dominion Government, to which it has been under lease for several years. We are officially advised that no change has tagen place in regard to the shipyard. The plant which has been in operation for many years is controlled by the Marine Department of the Dominion Government. The property was originally owned by the McCarthy Estate and some considerable time ago it was expropriated for Government use.

Reinforced Concrete for Steamship Hulls.

Some details were given in Canadian Railway and Marine World for October relative to the use of reinforced concrete for the hulls of steam driven and other vessels, and also of the vessel of this type under construction at Montreal. A series of organized movements are under way with the object of placing a number of these vessels in service so that actual tests may be made under various conditions.

It is announced that the U.S. Bureau of Standards at Washington, D.C., is preparing a 9 ft. model of a reinforced concrete ocean going steamship, at the request of the U.S. Emergency Fleet Corporation, to test the claims of engineers that a seaworthy vessel may be built of concrete, that it can be built cheaper than one of wood, and that it will weigh less than one of wood of the same tonnage.

It is also stated that the Standard Oil Co. has ordered a reinforced concrete vessel of about 5,000 tons to be built in San Francisco, and that this has been taken over by the U.S. Emergency Fleet Corporation for a series of tests under actual operation when completed.

The Torcrete Shipbuilding Co., mention of which was made in our last issue, is stated to be negotiating for a site in Detroit, Mich., for a yard for the construction of reinforced concrete vessels on a special principle, the concrete to be applied from the inside of the hull under air pressure.

Marine Slip, Docks, etc. at Ojibway.

The Canadian Steel Corporation, Ltd., Ojibway, Ont., has given a contract to the Great Lakes Dredging Co., Ltd., of Port Arthur, Ont., for the construction of a marine slip or harbor and unloading docks or wharves to provide for the unloading and storage of ore, limestone and coal. The marine slip or harbor will extend about 2,403 ft. inland from the harbor line, along the left bank of the Detroit River. Its width, from face to face of the concrete walls, which will be 9 ft. high by 12 ft. wide, will be 400 ft. This will reduce to 202 ft. between walls, at a distance of 303 ft. from the harbor line. It will continue at the width of 202 ft. for a further distance of 2,100 ft. inland from this point. The depth will be 23 ft. measured from the mean water level of the Detroit River. All piles supporting concrete walls will be approximately 80 ft. in length and will be driven to rock. Ore and limestone will be unloaded and stored on one side of this slip and coal for by-product coke ovens and general plant use on the other side. The work does not include piling or concrete walls for support of bridges; neither does it include any unloading machinery.

Steamships Commandeered by U.S. Government.

The U. S. Shipping Board issued the following early in October: The U. S. Shipping Board hereby gives notice to all owners of ships registered and enrolled under the laws of the U. S. that the requisition of all American steamers described below and of which previous announcement has been made will become operative and effective on Oct. 15, at noon.

The ships affected by said requisition and included therein are: All cargo ships able to carry not less than 2,500 tons total dead weight, including bunkers, water and stores. All passenger steamers of not less than 2,500 tons gross register.

As to all steamers in or bound to American ports on Oct. 15, requisition becomes effective after discharge of inward cargo and ship is put in ordinary good condition. As to steamers which have started to load their outward cargo requisition becomes effective at noon on Oct. 15, and accounts as to hire and expenses will be adjusted from time steamer began to load. Steamers, trading to and from American ports, that have sailed on their voyage prior to Oct. 15, 1917, at noon, are to complete that voyage as promptly as possible and report for requisitioning. Steamers that are occupied in trades between foreign ports shall be requisitioned as of Oct. 15, 1917, at noon, and accounts adjusted accordingly.

Owners whose steamers are operating in their regular trades are to continue the operation of their steamers for account of the government, as they have been doing for themselves, until they receive further instructions. Owners whose steamers are chartered to others will apply to the Shipping Board for instructions regarding the future employment of said steamers.

In reference to the foregoing notice it is said that the commandeering will apply to about 500 steamships.

The Port of Quebec and Ocean Shipping Facilities.

The Quebec Board of Trade, of which J. G. Scott, ex-General Manager, Quebec and Lake St. John Ry., is President, made a number of suggestions to the Dominion Government recently, in connection with the increasing of shipping facilities at Atlantic shipping ports. Among these suggestions are, the building of grain storage of 10,000,000 bush. at each of the ports of Quebec, Halifax and St. John, with steamship docks at Quebec and St. John, similar to those now under construction at Halifax. It is also suggested that the Dominion Government should control insurance rates of vessels using Canadian ports on the seaboard and in the St. Lawrence, so that they should, at all seasons of the year, be the same as those charged for vessels running to and from New York. It is claimed that the discrimination against Canadian ports by the underwriters is driving vessels from those ports, and though this control of the rates might cost the Government something, the result would justify any expenditure that might be necessary. The government is also asked to compel all government subsidized vessels to accept the same rates for ocean freights to and from Canadian ports as are current month to month at New York, and it is suggested that this might be regulated through the Board of Railway Commissioners.

The Board of Trade has also asked the government to build and operate, in connection with the government railways, not less than 10 large ocean freight steamships of from 1,000 to 15,000 tons capacity for a semi weekly service from Quebec in the summer, and from Halifax or St. John in the winter.

Forwarders Ltd. has been incorporated under the Dominion Companies Act, with $250,000 capital and office at Ottawa, to build and operate steam and other vessels, and to carry on the business of common carriers within and without Canada, and of towing and wrecking; also to build and operate grain elevators, warehouses, and flour mills. The incorporators are, W. H. Dwyer, J. H. Hall, A. Blackburn, J. R. Osborne and S. R. Broadfoot, Ottawa. This is a reincorporation of a company of the same name, of which W. H. Dwyer is President, and which had its office first at Kingston and later at Ottawa. In Nov., 1909, it bought the s.s. Port Colborne, which was built in England for the lake trade and brought to Canada as a speculation. The steamships Port Dalhousie and W. H. Dwyer were subsequently purchased, and later all three of the company's vessels were operated between New Brunswick and Maine in the pulpwood trade, and later were transferred to Europe for service there, since when the company has operated no steamships.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during September

ARTICLES			CANADIAN CANAL	U. S. CANAL	TOTAL
Flour	Eastbound	Barrels	398,200	520,450	918,650
Wheat		Bushels	3,184,621	5,380,556	8,565,177
Grain		Bushels	827,150	3,496,935	4,324,085
Copper		Short tons	379	11,604	11,983
Iron ore		Short tons	1,288,192	8,010,619	9,298,811
Pig iron					
Lumber		M. ft. b.m.	2,882	49,311	52,193
Stone		Short tons			
General merchandise		Short tons	10,633	34,673	45,306
Passengers		Number	2,444	894	3,338
Flour	Westbound	Barrels			
Grain		Bushels		450	450
Coal, hard		Short tons	17,150	385,174	402,324
Coal, soft			204,870	2,856,620	3,061,490
Iron ore		Short tons	7,546	12,096	19,642
Manufactured iron		Short tons	2,505	9,619	12,124
Salt		Barrels	7,000	75,340	82,330
Oil		Short tons			
Stone		Short tons			
General merchandise		Short tons	33,279	103,853	137,132
Passengers		Number	2,244	829	3,073
SUMMARY					
Vessel passages		Number	693	2,572	3,265
Registered tonnage		Net	1,402,058	7,616,659	9,018,717
Freight—Eastbound		Short tons	1,457,857	8,441,808	9,899,665
—Westbound			266,350	3,378,671	3,645,021
Total freight			1,724,207	11,820,479	13,544,686

The United States Government's Shipbuilding Work.

Rear Admiral Capps, Chairman of the United States Emergency Fleet Corporation, issued the following statement at the end of September, since which no further statement has been made public:

During the past two months the Emergency Fleet Corporation has awarded contracts for 118 wooden vessels of 3,500 tons dead weight capacity each to 27 different shipyards. There had previously been awarded contracts for 235 wooden vessels of similar type to the above, and for 58 vessels of composite construction, thereby making a total award to date of 411 wooden and composite vessels of an aggregate dead weight tonnage of 1,460,-900. During the past two months the designs for machinery have been completed for the manufacture of engines, boilers and other articles of equipment for these vessels, for which the facilities available of machine shops and boiler works throughout the country have been availed of. Specifications have been prepared and negotiations outlined and initiated for the assembly and installation of machinery in wooden vessels, the most of which have been or are being constructed as "hulls only." Great difficulty has been experienced on the Atlantic coast in obtaining suitable lumber for these ships, and it is anticipated that there will be greater delay in their completion than was expected when this movement was begun, notwithstanding every possible effort on the part of the corporation and its contractors.

Since Aug. 1 there have been awarded contracts for 155 steel cargo vessels of 1,076,800 tons dead weight tonnage, distributed among 6 shipyards. The most important of these contracts are for vessels of the so called fabricated type, and special shipyards are being prepared for them. Contracts for the boilers and machinery and steel construction of these vessels have been placed, and the contractors are actively at work preparing sites for the assembling of these ships. The best efforts of the Emergency Fleet Corporation are devoted to expediting these great shipbuilding projects. Previous to Aug. 1, 70 steel cargo vessels of 587,000 tons total dead weight capacity had been contracted for. These vessels were distributed among 10 shipyards. Therefore at present the total number of steel vessels under construction for the U.S. is 225, with a total aggregate dead weight tonnage of 1,663,800.

By proclamation of Aug. 3, 1917, the Emergency Fleet Corporation, under authority delegated by the President, under the provisions of the emergency act, approved June 15, 1917. requisitioned all vessels under construction in the shipyards of the U.S. of 2,500 tons dead weight capacity and above. By this act the U.S. acquired a total number of 403 vessels, determined by the progress reports obtained from the various shipyards to be actually under construction; in many cases where keels had not actually been laid, engines, boilers, equipment and materials, all of which were also requisitioned, are in various stages of progress; and in comparatively few cases contracts existing for vessels not actually begun, which may or may not be proceeded with, as the merits of the case, compared with what is desirable construction, are considered. The total dead weight tonnage under construction thus acquired, and on which orders have been issued to proceed with the maximum expedition, exceeds 2,000,000 tons dead weight.

There are now under construction for the Emergency Fleet Corporation as follows:

Type of vessel.	Number.	Total dead-weight tonnage.
Wood	353	1,253,900
Composite	58	207,000
Steel	225	1,663,800
Requisitioned	403	2,800,000
Grand total	1,039	5,924,700

In addition to the above Congress in a pending bill is authorizing the construction of additional vessels whose total dead weight capacity will be nearly 5,-000,000 tons. Plans for the major portion of these additional vessels are in course of preparation and many of them will be of special types adapted to particular necessities of war, and while substantially cargo carriers, will have much greater speed than the cargo vessels now under construction.

The corporation has ascertained from the builders of requisitioned vessels their demands for structural steel, machinery, and various items of equipment, and is endeavoring to regulate the supply of items to provide for the individual needs of the shipbuilders in accordance with their programme of capacity, so far as the country's resources are available. And it is apparent that with the similar needs of the naval service and the War Department, with which the Emergency Fleet Corporation is working in harmonious co-operation, every mechanical resource of the U.S., with considerably increasing development, will be necessary for the realization of this programme and what must follow in continuation of it.

The Emergency Fleet Corporation has instituted an industrial service department, which, by co-operation with the Department of Labor, is undertaking to assist shipbuilders and others in the employment of suitable labor and to initiate an extensive system of vocational training with the purpose of adapting allied trades and unskilled labor for service in shipyards, and through co-operation with the Y.M.C.A. organization throughout the U.S. to give attention to the housing and personal affairs of the men recruited for shipbuilding work. The vast development of shipbuilding essential to this emergency necessitates an agency of this kind, because up to this time the thinning out of unskilled men in the older shipyards over a large territory is, in many instances, resulting in greatly decreased production. It has been estimated that 150,000 new men are necessary for full production.

With the passage of the pending bill, Congress will have authorized $1,799,000,-000 for the Shipping Board and the Emergency Fleet Corporation, and the actual appropriations made, including those in the pending bill, reach a total of $1,085,-000,000.

U. S. Government Merchant Fleet.—E. F. Carry, car manufacturer, Chicago, who is a member of the Shipbuilding Wage Adjustment Board, is reported to have been appointed Director of Operations for the United States Shipping Board. He will be directly in charge of the operation of the government's merchant fleet.

Marine Signals on Quebec Bridge.—Two white lights are being exhibited, one at the interior of each extremity of the central span, 760 ft. from each other, and 150 ft. above high water. Red lights are also shown from the cantilever arms, 1,300 ft. from each other, 88½ ft. above high tide.

Atlantic and Pacific Ocean Marine.

Frank Waterhouse & Co., Inc., carrying on business at Seattle, Wash., has been licensed to also carry on business in British Columbia, with office at Vancouver.

The Great Northern Steamships Co.'s steamships Great Northern and Northern Pacific, which were taken over by the U. S. Government recently, are in yards in Puget Sound for extensive alterations. It is announced that they are to be used as transports.

The s.s. Soukahras, which was built recently at a U.S. shipyard on the Great Lakes, is being cut in two for passage through the Welland Canal to a Canadian yard, where she will be rejoined, and, in all probability, sail for New York, and thence to France, under the ownership of the Oriental Navigation Co., of Nantes, France, and New York. She was originally ordered for a private firm, and was acquired by the Oriental Navigation Co. while on the stocks, as were also two other vessels under construction in Canadian shipyards. Her dimensions are, length 387 ft. over all, width, 43.9 ft. depth 28 ft.; 3,819 gross tons. At the time of writing it had not been announced whether this vessel would be taken over by thhe U. S. Government under the recent order taking over all vessels under construction in U. S. yards. The builder completes his contract when the vessel is delivered complete and ready for ocean service.

Maritime Provinces and Newfoundland.

An Ottawa press dispatch of Oct. 13 stated that the Public Works Department had intimated that tenders would be invited for the completion of the harbor works at St. John, N.B., the Norton Griffiths Co. having abandoned this contract. On Oct. 20, we were officially advised that no such decision had been arrived at.

Mathers & Co., Halifax, N.S., are reported to have bought the steam yacht Thomas B., which was purchased in the U.S. about a year ago by the Halifax Dredging Co. It is stated that all the deck cabins have been removed and that the vessel is to be used in the freight trade, probably between Canadian and U.S. ports. Under U. S. ownership she was named Cora.

Salvaging operations are proceeding on the Anchor-Donaldson Line s.s. Letitia, which was wrecked near Portuguese Cove in Halifax harbor, Aug. 1. A considerable portion of the machinery has been removed and the upper portion of the hull tightened up for the use of compressed air. It is said that a large rock which pierces the bottom, is to be blasted within the hull, and the hole filled with cement.

It is reported from New Brunswick that it is apparent that a halt has been called in the inflated prices being pair for schooners. An instance is given of the schooner Persis A. Colwell, 440 tons register, built in 1904, for which $62,000 was paid in the summer, and which has been lying idle for several weeks owing to her owners not being able to turn her over at a profit, the price required being $70,000. It is said that it is doubtful if she could be sold today for $50,000. Possibly the regulation prohibiting the use of sailing vessels within the submarine zones may account for the decreased demand. Howere, there is plenty of room for utilizing sailing vessels to and from other ports. The schooner named has been chartered for a West Indies service.

Province of Quebec Marine.

Up to Aug. 31, 48,792,624 bush. of grain were exported through Montreal, 30,718,360 bush, passing through the Harbor Commissioners' elevators and the balance through the G.T.R. elevators.

Ontario and the Great Lakes.

The U.S. steamships Saxona and Pentecost Mitchell, which collided and sank in the St. Marys River, near Watson reef, May 13, have been raised.

The Ogilvie Flour Mills Co. has deposited plans of a dock it proposes to build in the Kaministikwia River at Fort William, in front of its present mill site, on the easterly side of Front St.

The Northern Navigation Co.'s s.s. Hamonic, while running to Windsor, Oct. 15, struck a hidden obstruction and broke her propeller. She was dry docked at Detroit, Oct. 16, for repairs.

The s.s. Western Star, owned by the Cadillac Steamship Co.. Cleveland, Ohio, which went ashore on Robertson Rock in Georgian Bay, Sept. 24, 1915, has been salved by the Great Lakes Towing Co.

A press dispatch from Port Huron, Mich., October 17, stated that an oil burning ship named Ada, being one of the vessels built at Superior, Wis., for the U. S. Emergency Fleet Corporation, had passed down en route to New York.

The Ontario Car Ferry Co., operating two car ferries, Ontario No. 1 and Ontario No. 2, between Cobourg and Genesee dock, Rochester, N.Y., made the last trip of the season on regular schedule, Sept. 29. Since that date, trips are made only on an irregular schedule solely for freight traffic.

The Lehigh Valley Rd. has announced that owing to the commandeering by the U. S. Government of its lake vessels, its service in the merchandise package trade between Buffalo, N.Y., and Chicago, Ill., has been discontinued. Four steamships were operated in this service, and these have been taken over by the U.S. for Atlantic service.

The U. S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level for September as follows: Superior, 602.73; Michigan and Huron, 581.68; St. Clair, 576.23; Erie, 573.28, and Ontario, 246.93. Compared with the average September levels for the past ten years, Superior was 0.03 ft. above; Michigan and Huron 1.06 ft. above; Erie 0.94 ft. above, and Ontario 0.75 ft. above.

The s.s. Richard W., owned by Richard W. Ltd., Quebec, Que., and managed by the Canadian Shipping Co., which is controlled by the Canadian Import Co., Montreal, ran aground about four miles below Long Island, near Kingston, Oct. 14, while coal laden for Montreal. Her cargo had to be removed before she could be got off, when it was found that her shoe had been fractured. The s.s. Richard W. was formerly the s.s. Pueblo, and was at one time owned by the Canada Cement Transport Co., Ltd., Montreal.

A deputation of business men from towns and cities along the Lake Erie & Northern Ry. met at Port Dover, Oct. 16, to discuss with Dominion Government representatives, who were there looking over the harbor conditions, the need for further work and government aid for the betterment of harbor facilities there. It was pointed out that the docks have deteriorate owing to non-use, and the harbor has silted up. Parliament has voted $6,000, but considerably more is required to develop the harbor to its proper capacity.

The Montreal & Cornwall Navigation Co.'s s.s. St. Laurent was burned to the waters' edge while at her moorings in the Cornwall Canal, Oct. 19. She was built at St. Nicholas, Que., in 1880, and originally named Brothers. She was overhauled in 1900 at Montreal, and again at Sorel, Que., in 1909. She has been operated between Montreal and Cornwall for several years, and was used previously as a ferry at Montreal. Her dimensions are: Length, 127 ft.; breadth, 24.6 ft.; depth, 8.3 ft.; tonnage, 349 gross, 189 register, and she was equipped with engine of 43 n.h.p. driving paddle wheels.

The Valley Camp Coal Co.'s s.s. William S. Mack is reported to have been sold to the Sault Shipping Co., Sault Ste. Marie, Ont. The first named company is associated with the Great Lakes Transportation Co., of which Jas. Playfair is President and General Manager, and the Sault Shipping Co. is controlled by the Lake Superior Corporation. The s.s. William S. Mack was built at Lorain, Ohio, in 1901, on the channel system, with steel tank top. where no wood ceilings are fitted, three watertight and two non watertight bulkheads, steel boiler house, steam pump wells, electric light, etc., and the hull is divided into four compartments with hatches 24 ft. centres. Her dimensions are: Length, 346 ft.; breadth, 48 ft.; depth, 28 ft.; tonnage, 3,720 gross, 2,785 register, and she is equipped with triple expansion engines with cylinders 20, 33½ and 55 in. diam. by 40 in. stroke, 1,000 i.h.p. at 80 r.p.m., and supplied with steam by two Scotch boilers, 12 ft. 10 in. by 13 ft., at 175 lb.

A Washington, D.C., press dispatch of Oct. 5, said: "Enlargement of locks on the Welland Canal, to permit construction of bigger ships on the Great Lakes, for ocean service, is under consideration by American and Canadian government officials." The question of getting the larger vessels now operating on the Great Lakes, through to the ocean, where they could be used to great advantage, is without question engaging the attention of both governments. The Canadian Government as most people are aware, has under construction a ship canal, which, when completed, will be quite capable of taking the largest vessels through from the Great Lakes. This work is suspended, and will probably not be resumed until after the war. The question of enlarging the existing locks on the present canal, with other necessary work following would seem to be as large a job as completing the new canal now partially built. In the meantime certain vessels are being cut in two and towed through the canals to St. Lawrence ports where they are to be re-connected, and sent on to the coast.

British Columbia and Pacific Coast.

The Norwegian s.s. Niels Nielson, which struck a rock recently in Puget Sound, was taken to Esquimalt, Oct. 11, and placed in Yarrows' dock for bottom repairs.

A contract is reported to have been awarded recently for $37,750, for salving the s.s. British Columbia, which sank at the docks at Hastings Mills, B.C., while loading cargo, at the end of August.

The C.P.R. and Grand Trunk Pacific Coast Steamship Co.'s steamships, operating along the British Columbia coast, have ceased supplying intoxicants on their vessels, following the passing of a prohibition law in the province.

The Union Steamship Co.'s s.s. Cassiar, which was wrecked near Privett Island at the end of August, has, it is reported, been taken over by the owning company, from the underwriters. The estimate for repairing is about $30,000, equal to the amount of the insurance

A British Columbia court has decided that both the Canadian Pacific Ocean Services' s.s. Empress of Japan and the s.s. Belridge were to blame for a collision between them on Jan. 31, off Trial Island, during a snow storm. The liabilities connected with the collision are to be divided equally and each side pays its own costs.

The South Vancouver, B.C., council passed a resolution recently, in favor of submitting a bylaw to the ratepayers to exempt the shipbuilding site known as the Robson site, from taxation during actual shipbuilding operations, the total exemption not to exceed ten years. and the bylaw not to be submitted to the vote until the plant is built on the site.

At a recent meeting of representatives of the pilotage boards of Victoria, Vancouver, New Westminster and Nanaimo, to consider a number of proposed changes in the system of pilotage, it was proposed that the four districts be amalgamated, but it was decided not to do so, as the desired results could be achieved by amendments to the Canada Shipping Act giving the British Columbia authorities the same discretionary powers as possessed by those on the Atlantic coast.

The Union Steamship Co. has purchased the steamships Santa Maria and Selma from the All Red Line, Ltd., Vancouver, and will continue to operate them in the coast trade. Both vessels are of the private yacht type, and were brought from England a few years ago as a private venture, and a company incorporated under the title of All Red Line Ltd., for operating them in the coast service as far north as Powell River.

An order in council has been passed defining a permanent harbor head line beyond which wharves, piers, breakwaters and other similar structures shall not be built on the south shore of the Fraser River, opposite New Westminster, from Port Mann to the Government wing dam at Annieville bar. The head line was approved by the New Westminster Harbor Commissioners, and recommended by the Marine Department's Chief Engineer.

A deputation representing the Chamber of Commerce, Tacoma, Wash., waited on J. W. Troup, Manager, British Columbia Coast Service, C.P.R., at Victoria, recently, requesting that a direct steamship service be given to Tacoma, if possible, between Tacoma and Burrard Inlet, instead of between Tacoma and Victoria. It is stated that the three main points which guided the deputation in arguing their case for a direct service were, that it is usual for the C.P.R. to lay up one of its steamships at this time of the year, the impossibility of creating travel between Tacoma and British Columbia unless a first class steamship is put in service, and the fact that U.S. regulations do not permit of Canadian vessels calling at two consecutive ports in the U.S. The last mentioned difficulty may be removed shortly, as the U.S. Government is considering the modification of its regulations so as to permit Canadian vessels to engage in U.S. coasting service, except between Alaska ports.

The International Shipbuilding Corporation, Ltd., which was incorporated recently with head office at Montreal, has removed its head office to Newcastle, N.B.

Great Lakes Vessels for Ocean Service.

Following the lead given by several of the Dominion transportation companies operating on the Great Lakes the United States Emergency Fleet Corporation is arranging for all available U. S. vessels used in Great Lakes service to be transferred to salt water. On Oct. 12, thirteen steamships of 32,768 gross tons, had been ordered to proceed to dry docks, there to be cut in two to allow of passage through the Welland Canal. These vessels are all of the passenger and packet freight type, as the intention is to interfere with the bulk freight traffic as little as possible. Following are the names of the vessels, with the owning companies: Great Lakes Transit Corporation—Codorus, Mahoning, Northern King, Northern Light, Northern Queen, Northern Wave, North Wind; Lehigh Valley Transportation Co.—Bethlehem, Saranac, Seneca, Tuscarora; Crosby Transportation Co.—America; Chicago, Milwaukee and Racine Line—Minnesota.

Some of these vessels have already been, and the others will be, cut in two, at some U. S. port on the Great Lakes, and rejoined at a Canadian port on the St. Lawrence. The Dominion Government, through the Marine Department, is working with the U. S. Shipping Board in transferring the vessels, and it is announced that some of them will be rejoined at the Canadian Vickers yards at Maisonneuve, Montreal, and some at the Dominion Government dockyard at Sorel, Que., and negotiations are in progress with a view to ascertaining whether the dry dock at Quebec will be able to take care of a number of these vessels. It is also stated in a press dispatch from Buffalo, N.Y., that the U.S. Government has taken over the ship repair equipment of the Lake Shipbuilding Co., there, for transfer to Montreal, to assist in joining the vessels there, that a staff of 100 expert ship mechanics will accompany the plant to Montreal, and that the work will be under the general supervision of John Smith, marine surveyor, Cleveland, Ohio.

As announced in Canadian Railway and Marine World for October, arrangements have been made for the utilization of several of the steamships under the management of Canada Steamship Lines, Ltd., in ocean service. Three vessels owned by Canadian Northern Steamships Ltd., viz., A. E. Ames, Beaverton and H. M. Pellatt, and managed by Canada Steamship Lines, are practically ready for ocean service. The s.s. H. M. Pellatt was overhauled and strengthened at Kingston, Ont., and then proceeded to Oswego, N.Y., for coal for Montreal after which she proceeded to the coast. The s.s. A. E. Ames was at Kingston during October for general overhaul and preparation for similar service, and the s.s. Beaverton was handled at Buffalo, N.Y. The steamships Calgarian and Hamiltonian, owned by Canada Steamship Lines Ltd., are also being overhauled for ocean service, and it is stated that all five vessels will be cleared for the ocean before the close of the St. Lawrence season.

Of the three other steamships owned by Canadian Northern Steamships Ltd., which it was stated in our last issue would be transferred to ocean service, it is reported that a decision has been arrived at that in the case of the s.s. J. H. Plummer, the cost of the necessary alterations to fit her for ocean service was considered too great, and she has therefore not been taken. The steamships Mapleton and Saskatoon have been running during the summer between Sydney and Montreal in the coal trade, and as soon as navigation on the St. Lawrence is closed for the winter, they will be placed in ocean service.

Imperial Oil Co's Tank Steamships.

The Imperial Oil Co.'s oil tank s.s. Reginolite was given her trial trip on Sept. 30 by the builders, the Collingwood Shipbuilding Co. The vessel, which is intended for ocean service exclusively, is 250 ft. long, 43¾ ft. broad and 25 ft. deep. Her length is divided into five cargo tanks and a longitudinal centreline bulkhead running the full length making 10 oil tanks in all. A fuel oil bunker is fitted immediately in front of the boiler room and a cofferdam separates this from the main cargo tanks.

The Imperial Oil Co.'s Steamship Reginolite on her trial trip, Sept. 30, 1917.

The main propelling machinery consists of one set of triple expansion engines, having cylinders 18, 30 and 50 in. by 36 in. stroke, steam being supplied by 2 single-ended Scotch boilers, 13½ ft. diam. by 11 ft. long, the steam pressure being 180 lb. working under natural draft. The oil pumping arrangement is of the most elaborate kind of design to handle the cargo in the most expeditious manner.

The trials, although carried out in stormy weather, were highly successful, the guaranteed speed being exceeded by 1½ knots. This is the fourth oil tank steamer the Imperial Oil Co. has had built at Collingwood. The fifth vessel, the Talaralite, precisely similar to the Reginolite, was launched Oct. 18.

Mainly About Marine People.

R. S. Gourlay, one of the Toronto Harbor Commissioners, has been re-appointed for three years, by the Dominion Government.

F. H. Sheppard, M.P. for Nanaimo, B.C., in the last Parliament, has been appointed Inspector of Dredging in British Columbia.

M. Cussen, Assistant to Comptroller, Canada Steamship Lines, Ltd., Montreal, has also been appointed General Traffic Auditor, Northern Navigation Co.

W. J. Connors, of Buffalo, N.Y., will probably be put in charge of unloading U.S. transports and supply ships in France and to supervise the work of three regiments of stevedores and longshoremen now about organized.

Michael P. Fennell, Jr., who has been appointed Secretary-Treasurer and Comptroller, Montreal Harbor Commission, Montreal, was born there, Mar. 13, 1885, and entered transportation service in 1902, after completing a course at McGill University. He was, from Jan. to Sept., 1902, secretary to Master Mechanic, G.T.R., Montreal; Sept., 1902, to Apr., 1903, secretary to Freight Traffic Manager, G.T.R., Montreal; Apr., 1903, to Jan., 1907, secretary and accountaant, Engineering Department, Montreal Harbor Commission; Jan., 1907, to June, 1909, Assistant to President; June, 1909, to Sept. 24, 1917, Assistant Secretary-Treasurer. He is also Hon. Secretary-Treasurer of the Navy League of Canada; Hon. Secretary of the British Sailors' Relief Fund, and Hon. Provincial Naval Recruiting Secretary.

Lights and Signals on the Great Lakes.

All Canadian lights and fog alarms on Lake Superior will be kept in operation until the close of navigation, with the exception of those at Caribou Island, Otter Island, Quebec Harbor, Michipicoten Island, Michipicoten Island east end, Gargantua, Michipicoten Harbor, Corbeil Point and Ile Parisienne, which may be closed Dec. 20; and those at Slate Island, Battle Island, Lamb Island, Shaganash, Point Porphyry, Thunder Cape, Welcome Island, Pie Island and Victoria Island, which will be closed after the last sailing to or from Port Arthur and Fort William.

All Canadian lights and fog alarms on Lake Huron, Georgian Bay, Lake St. Clair, Lake Erie, Lake Ontario and connecting waters, will be maintained in operation until the close of navigation, except the southeast shoal lightship on Lake Erie, which will be removed Dec. 12, and the Lonely Island light, Georgian Bay, which may be closed before the general close of navigation.

All gas buoys and other floating aids to navigation will be maintained in position as long as ice conditions will permit, and in cases where it is necessary to remove gas buoys before the close of navigation, the more important points will be marked by spars.

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Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

International Nickel Co.—Ambrose Monel, President, is reported to have tendered his resignation to accept a commission as Colonel on the staff of the Commander of the U. S. aviation forces.

The Fairmont Gas Engine and Railway Motor Car Co. is reported to have received a large order from the U.S. Government for railway motor cars for construction and maintenance forces on the U.S. Expeditionary Force's lines of communication. An order for 100 of these cars is also stated to have been reecived from the Illinois Central Rd.

The Du Pont Companies have issued a handy little booklet containing a list of all the products manufactured by the E. I. Du Pont de Nemours and associated companies, viz., Du Pont Chemical Works, Du Pont Fabrikoid Co., The Arlington Co., and Harrisons, Inc. This booklet does not indicate who uses the products, or how used, as does the Du Pont Products Book, but it will no doubt prove of interest as well as of value to mercantile and industrial men. It is small enough to fit in a man's pocket. It will be sent upon application to the home office at Wilmington, Del.

Henry M. Sperry has been appointed Publicity Representative for the Union Switch and Signal Co., General Railway Signal Co., Federal Signal Co. and Hall Switch and Signal Co., with headquarters at 120 Broadway, New York. He began his career in 1881 in the Pennsylvania Rd. engineer corps and in 1887 became Supervisor of Signals on the New York Division. In 1905 he was consulting Signal Engineer for the Hudson Companies, New York, in the preparation of plans for signaling in the Hudson River tunnels and the large terminal station at Church St. He was connected with the Union Switch & Signal Co. for some years and since then with the General Railway Signal Co.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Church Street, Vancouver, B.C.

Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.

Western Canada Railway Club—Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.

Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

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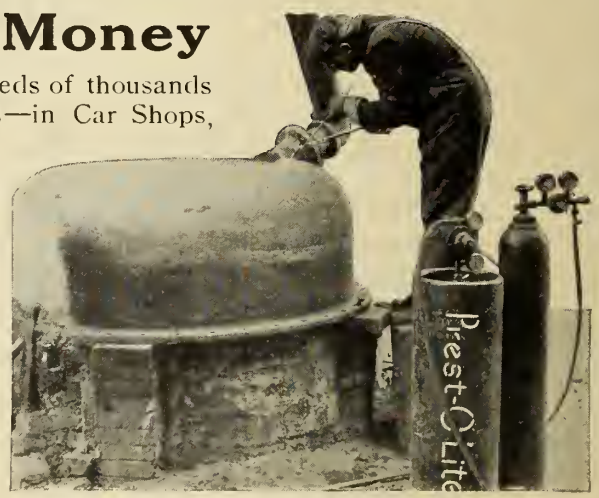

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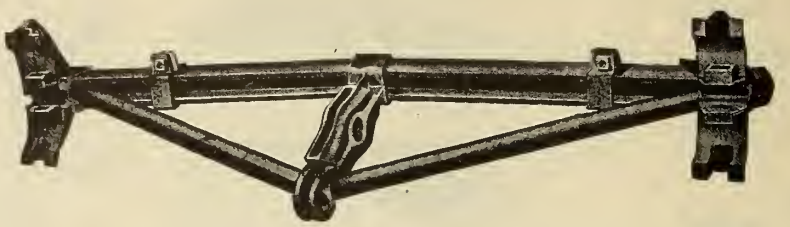

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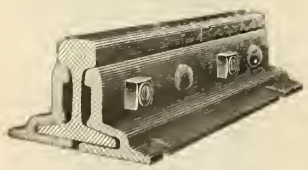

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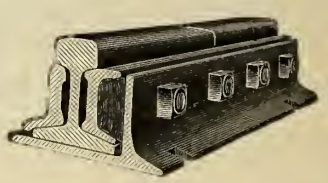

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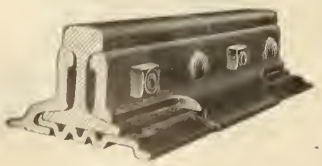

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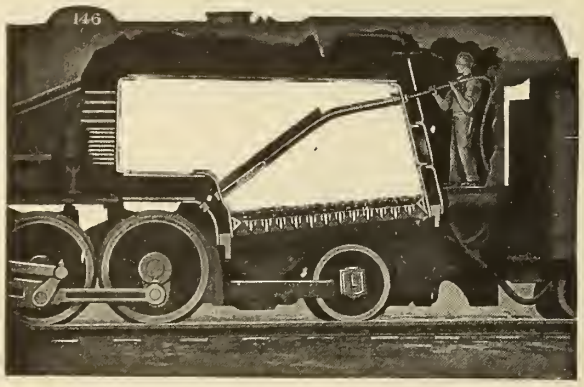

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1880 Levis, St. John, Halifax, Mulgrave	1,039
1898 Montreal, St. John, Halifax, The Sydneys	1,526

Passengers Carried		Tons Carried	
1877 - -	707,384	1877 - -	449,685
1897 - -	1,633,188	1897 - -	1,348,179
1916 - -	5,859,482	1916 - -	10,352,622

Gross Earnings		Employees	
1877 -	$1,272,506.00	1877 - - -	4,462
1897 -	3,019,471.00	1897 - - -	5,600
1916 -	21,374,697.00	1916 - - -	19,791

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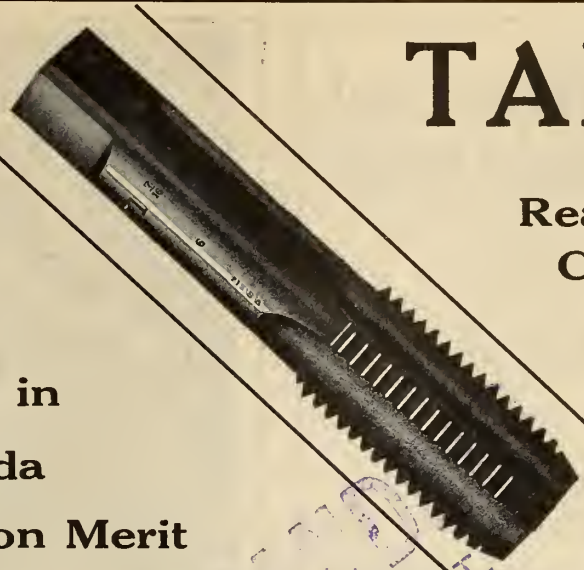

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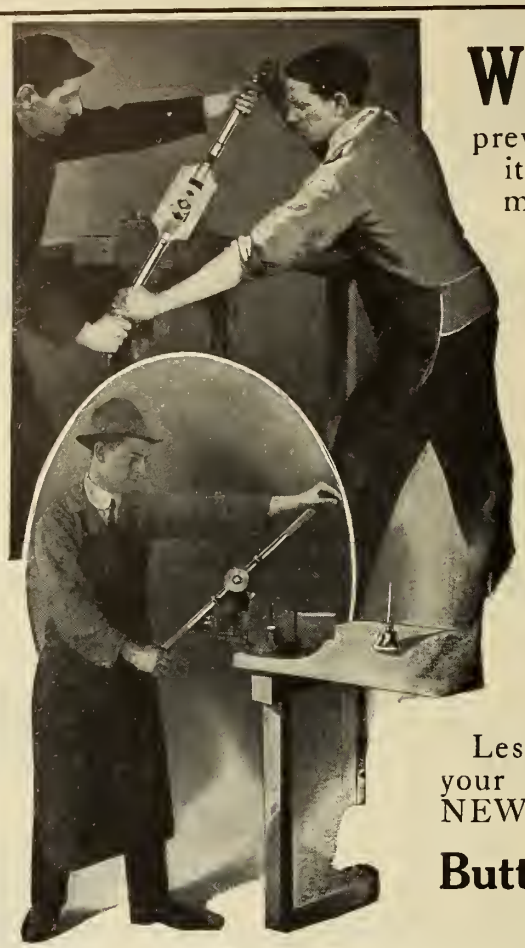

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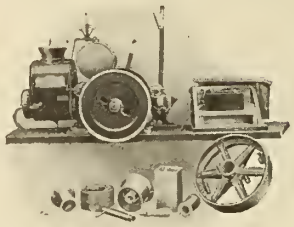

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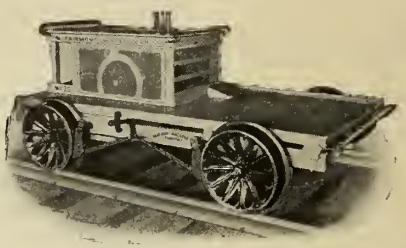

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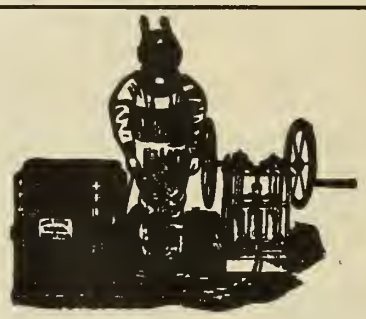

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in Headlights, Marker and Classification Lamps, to secure Efficiency of Service, Maximum Candle Power, Clearness of Light.

Galena Long Time Burner Oil

for use in Switch and Semaphore Lamps, and all lamps for long time burning, to avoid smoked and cracked chimneys and crusted wicks.

Tests and Correspondence Solicited.

BERTRAM
MACHINE TOOLS

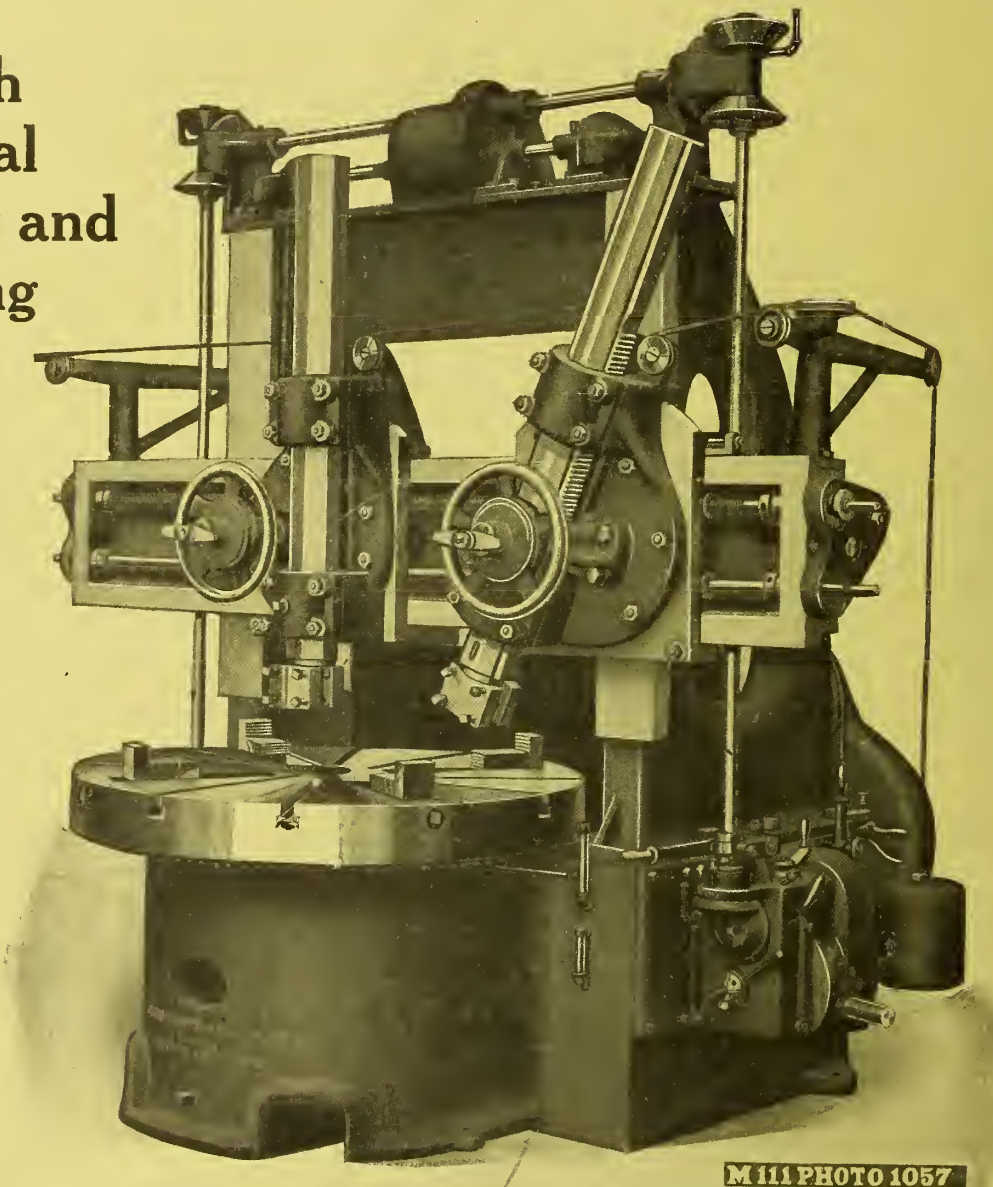
42-inch Vertical Boring and Turning Mill

Niles Type

Motor Driven Through Speed Box

Built in sizes from 42-inch to 100-inch Swing.

Drop us a line for Photographs and full particulars.



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The John Bertram & Sons Company Limited

DUNDAS, ONTARIO, CANADA

MONTREAL 723 Drummond Bldg. | TORONTO 1002 C.P.R. Bldg. | VANCOUVER 609 Bank of Ottawa Bldg. | WINNIPEG 1205 McArthur Bldg.

marked

Canadian Railway AND Marine World

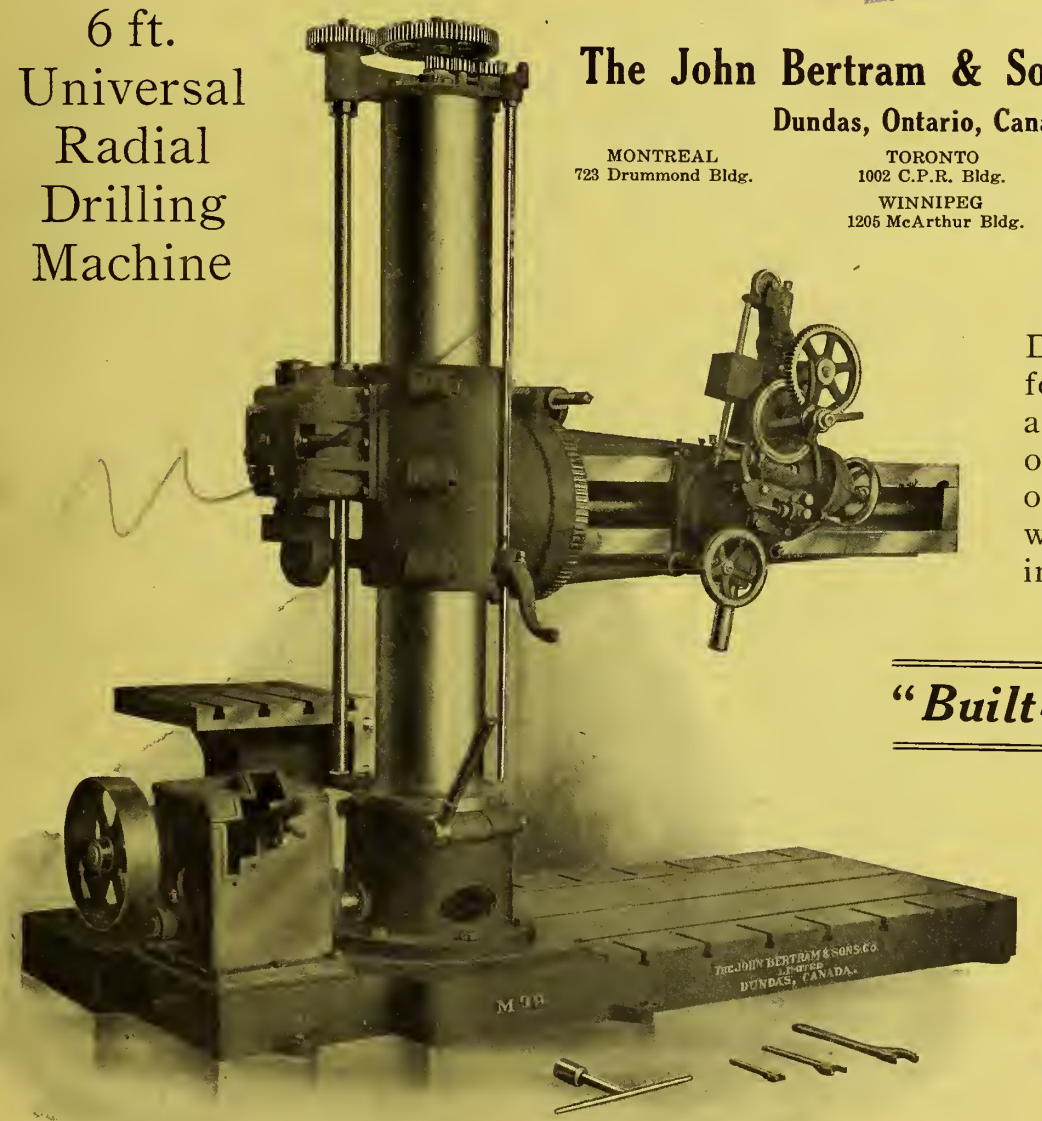
ESTABLISHED 1898.

Number 238 TORONTO, CANADA, DECEMBER, 1917 Subscription Rates, Page 479

BERTRAM MACHINE TOOLS

MILL
LAST AD.

6 ft. Universal Radial Drilling Machine



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Drop us line for photographs and full details on any machine or machines in which you are interested.

"Built-in-Merit"

J.B.&S.CO

Index to Advertisers, Page 92

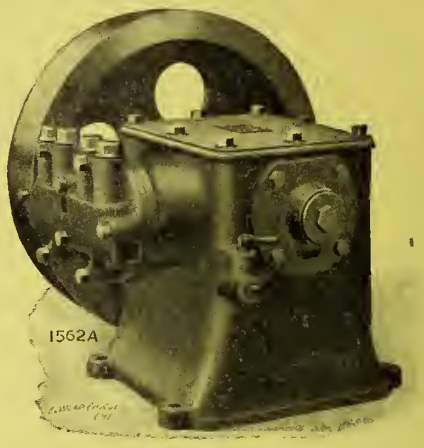
Purchasing Agents' Guide, Page 89

National Belt-Driven Compressors

Capacities 12 to 75 cubic feet of free air per minute

National Type J Belt-Driven Air Compressors are designed for intermittent service and pressures not exceeding 100 pounds, unless otherwise specified. For continuous service the compressor is water-jacked and known as Type J-W. Both types are made in five sizes.

For full particulars of the full line of National Air Compressors address nearest office.



Type J-1 Bolt-Driven Air Compressor for Intermittent Service.

Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO, Traders Bank Bldg. MONTREAL, 52 Victoria Sq. OTTAWA, Ahearn & Soper, Ltd. HALIFAX, 105 Hollis St. FT.WILLIAM, Telfer Bldg. WINNIPEG, 158 Portage Ave. E. CALGARY, Grain Exchange Bldg. VANCOUVER, Bank of Ottawa Bldg. EDMONTON, 211 McLeod Bdlg.

ESTABLISHED 1860

Sole Canadian Rights to Manufacture the "HYDE"

Anchor-Windlasses

Steering-Engines

Cargo-Winches

Which have stood the test of 50 YEARS

PROPELLER WHEELS

Largest Stock in Canada

STEEL CASTINGS

Cut Shows Largest Solid Propeller Ever Made in Canada.

Manufactured by

The WM. KENNEDY & SONS, Ltd., Owen Sound, Ont.

Northern Electric

Trolley Wire

What happens when the winter storms hit your line? Do you depend on an inferior grade of trolley wire, or will your equipment stand up under any test?

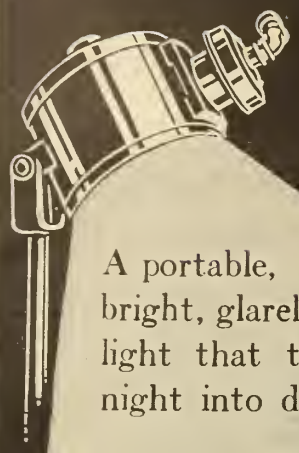
We manufacture all standard sizes of round and grooved trolley wire. Special attention in the drawing of the wire assures a product of the highest possible tensile strength and wearing qualities. The chance of disorganized traffic, due to a broken wire—with consequent loss of revenue, and ill-feeling of the public—is thus reduced to a minimum.

We also manufacture all other classes of wires and cables used in electric railway work, such as Bare and Insulated Feeder Cables, Bonding Cables, Lead-covered Feeder Cables, Special Rubber-insulated Wires and Cables for Car Wiring, Magnet Wire for Repairing Motors, etc.

Our nearest house will gladly quote on your requirements.

Northern Electric Company
LIMITED

Montreal Halifax Toronto Winnipeg
Regina Calgary Vancouver



ELECTRIC DAYLIGHT
WITH THE
Northern Electric
DAVIS
FLOOD LAMP

A portable, bright, glareless light that turns night into day.

It can be diffused over large areas or projected in a solid beam.

The light that lights Niagara

These Flood Lamps are ideal for lighting railroad terminals—freight yards—round houses—transfer yards and platforms—wrecking equipment – wherever working light is needed.

They can be used anywhere—no arc lamp trimming—no moving parts—no permanent wiring.
Write for our folder and tell us your lighting problems.

Northern Electric Company
LIMITED

MONTREAL OTTAWA WINNIPEG CALGARY
HALIFAX TORONTO REGINA VANCOUVER

Keystone Car Specialties were purchased for 529 Birney Safety Cars of which 141 or more will be for Stone & Webster properties.

The general adoption of Keystone Specialties on the famous Birney Safety Car furnishes a testimonial of inestimable value to all interested in this equipment. As is generally known, this type of car was designed with extraordinary knowledge of the requirements of present operating conditions—the principal object being to produce a car which would give "more service at less cost."

Users of Keystone Equipment may feel complimented over their wise selection, and prospective users should carefully consider the many advantages of using our famous Keystone Specialties and their general adoption on this famous car.

You'll find the following Keystone equipment on all Birney Safety Cars:

"Golden Glow" Incandescent Headlights
Illuminated Car Destination Signs
Faraday High Voltage Car Signals
Keystone Trolley Catchers
Keystone Air Sanders
Keystone Rotary Gongs

These "more service at less cost" specialties are ready at all times to increase the efficiency of your cars as they have done on thousands of other cars.

Write for Catalogs.

Electric Service Supplies Co.
MANUFACTURERS
PHILADELPHIA, 17th and Cambria Sts. NEW YORK, 50 Church St. CHICAGO, Monadnock Bldg.

Lyman Tube & Supply Co., Ltd.
CANADIAN DISTRIBUTORS
MONTREAL, Lyman Tube Bldg. WINNIPEG, 302 Donalda Block TORONTO, 33 Melinda Street

GENERAL RAILWAY SIGNAL COMPANY
OF CANADA LIMITED

Railway Operating Engineers, Manufacturers and Contractors
Electrical and Mechanical Signal Apparatus

Specialties { Single Track Signaling
Electric Interlocking

Electric Interlocking

Mechanical Interlocking

Highway Crossing Gates

Highway Crossing Bells

A-P-B. Automatic Block Signals for Single Track

A-C. and D-C. Automatic Block Signals for Double Track

Advantages of Absolute-Permissive Block Signaling (A-P-B)

Block for opposing movements is from siding to siding.

Block for following movements is from signal to signal.

Maximum protection at meeting and passing points.

Reduction of more than 30% in the minimum distance between following trains running under the ordinary scheme of signaling.

The display of a caution signal for every stop indication.

Reduction in number of 31 orders.

Owing to protection against opposing train movements, "Tonnage Signals" may be used on ascending grades so as to eliminate the stopping of heavy trains on grades where it would be difficult to start them.

Minimum number of signal appliances required.

Minimum number of line wires required.

Over 4000 miles of A-P-B. now in use.

Head Office and Works
LACHINE, QUEBEC

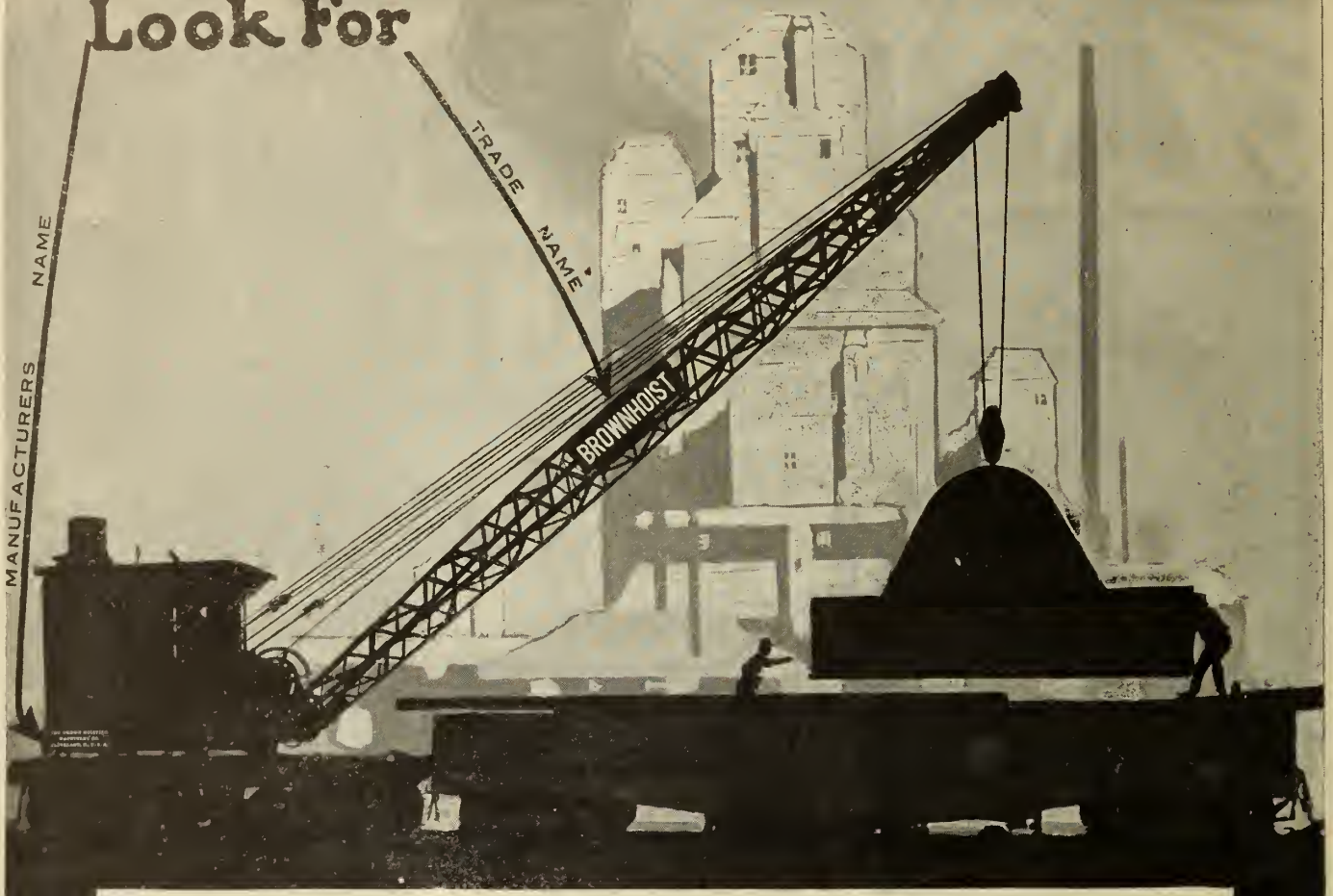
STEEL AND IRON

PRODUCTS

OF EVERY DESCRIPTION
FROM ORE
MINES TO
EXPORT

THE
STEEL
COMPANY
OF
CANADA
LIMITED
HAMILTON MONTREAL

When You See a Locomotive Crane Look For



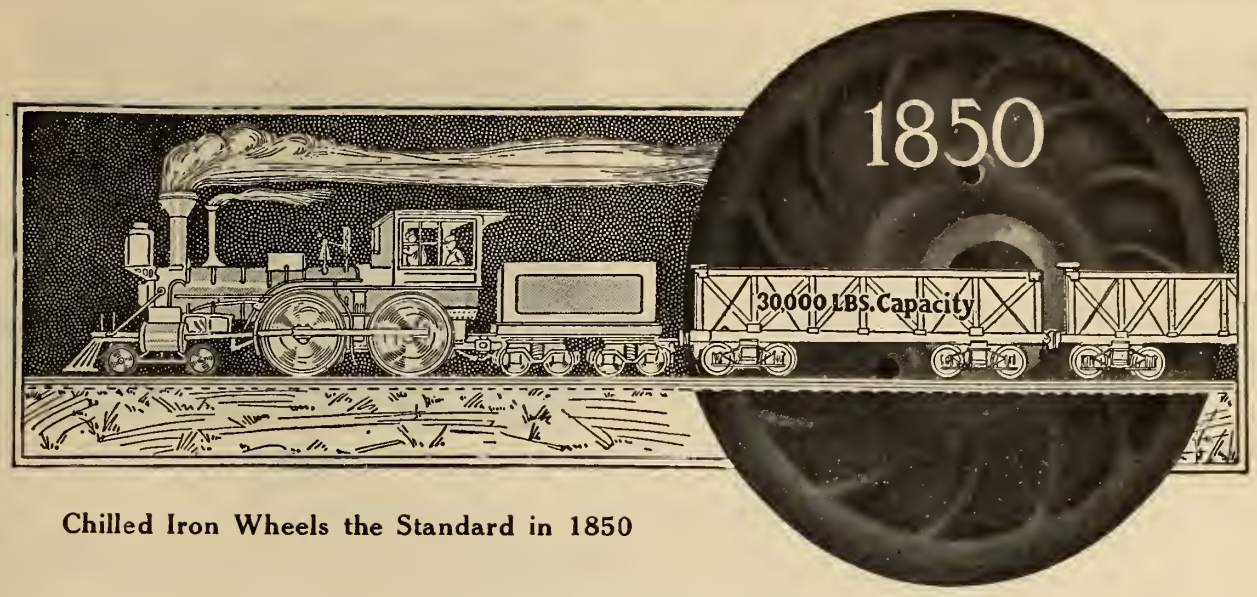
Ask the crane operator what he thinks of a Brownhoist Crane. Inquire of him as to the crane's operation, capacities, speeds, boiler, engines, traveling mechanism, clutches, and in fact every detail. He will no doubt tell you that the crane is easy to operate and that it is so safe that he isn't afraid to handle capacity loads. He will say that all operations are fast, the boiler is a good steamer, and a number of loaded cars can be shifted easily and quickly. He will further tell you that the crane gives practically no trouble, which means continuous operation and low upkeep cost.

You might say, "That means a perfect crane." That is impossible, but 25 years have been spent in perfecting the Brownhoist Crane, and it is considered a fine machine by crane users. It may cost more, but is worth it.

The Brown Hoisting Machinery Company

Cleveland, Ohio, U.S.A.

Engineers and Manufacturers of Heavy Dock Machinery, Bridge Cranes, etc., as well as smaller Cranes and Hoists.
Branch Offices in New York, Pittsburgh, Chicago, San Francisco, and (Portland, Ore., Colby Eng'r Co.)



Chilled Iron Wheels the Standard in 1850

The Wonderful Single Service Chilled Iron Wheel

Considered from a chemical, physical and metallurgical standpoint, the chilled Iron Wheel possesses certain inherent properties which are not found in other metals.

The higher combined carbon in the tread or running surface of the wheel produces the hardness which is so necessary for a maximum wear and the Chilled treads will not crush or flow under the heaviest traffic pressure.

The plates are soft with an open fracture which enables the wheel to resist temperature stresses due to brake application.

The hubs are soft, which insures a strong and perfect axle fit.

These conditions are ideal for service and there is no other metal that possesses this graded hardness of structure.

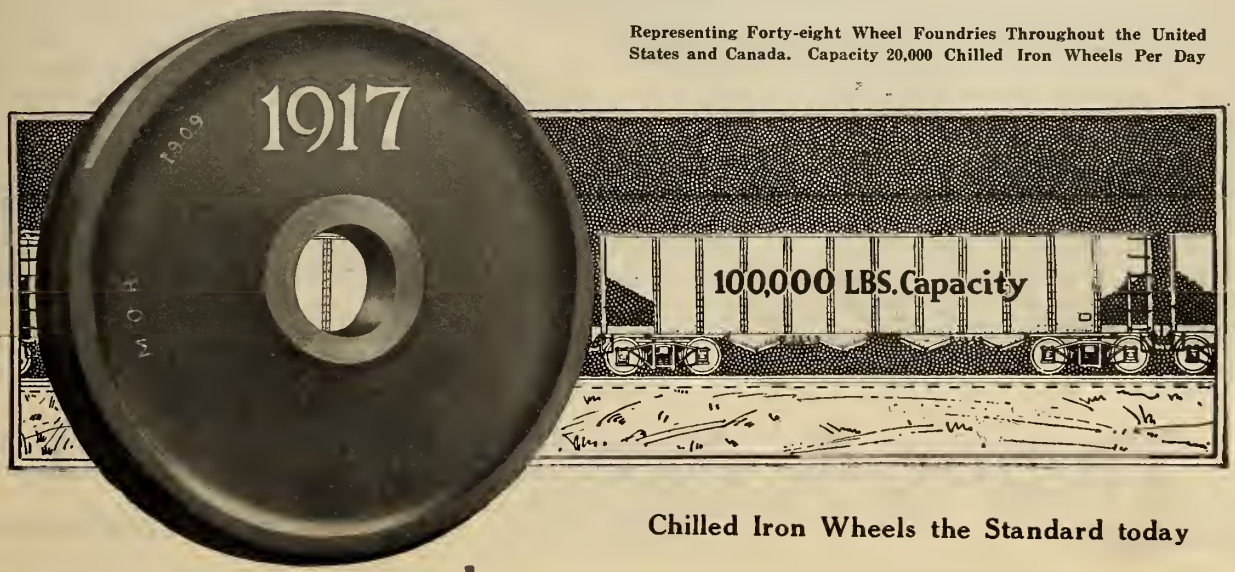
The single service, one-wear chilled iron wheel, because of its hardness, will give a greater mileage per unit of metal worn away than any other type of wheel.

25,000,000 now running.

Association of Manufacturers of Chilled Car Wheels

1228 McCormick Building, Chicago

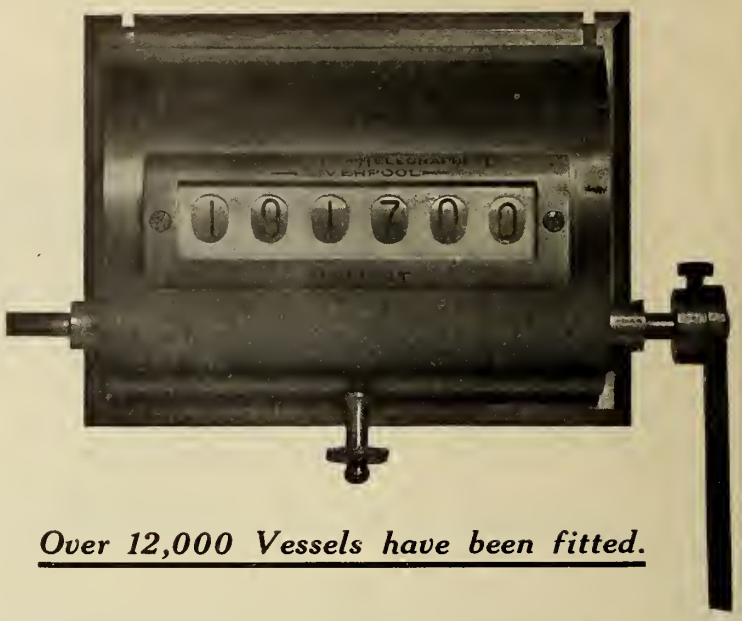
Representing Forty-eight Wheel Foundries Throughout the United States and Canada. Capacity 20,000 Chilled Iron Wheels Per Day



Chilled Iron Wheels the Standard today

Patent Marine Engine Counters

Telegraphs for Engine, Twin Engine, Stokehold, Steering and Docking



Over 12,000 Vessels have been fitted.

Chadburn's (Ship) Telegraph Co'y, Ltd.

Sole Canadian Representatives

TAYLOR & ARNOLD, LIMITED

The "Taynold" Incandescent Electric Headlight

1500 FEET OF "GREAT WHITE WAY" BY TAYNOLD LIGHT

Taylor & Arnold, Limited

Montreal **Winnipeg** **Vancouver**

"DOMINION" Wire Rope

Do you know that every foot of Wire Rope that was used on the present

QUEBEC BRIDGE

was supplied by

The Dominion Wire Rope Co., Limited

Montreal Toronto Winnipeg

General Service Cars

—Otis Dump Cars—

Built in Box Gondola Stock and Ore Cars

For Standard or Special Service

The HART-OTIS CAR CO., Limited, MONTREAL

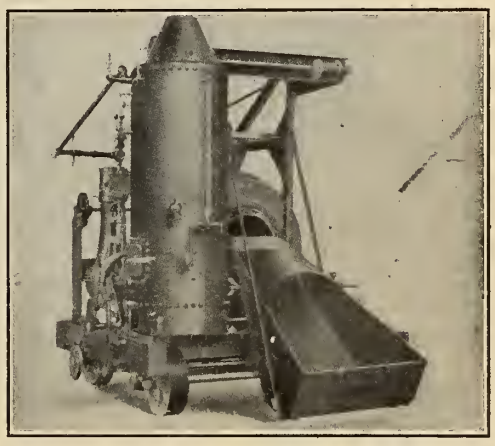
—SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA—

"Ransome" Mixers

Were used to mix the concrete for the sub-structure of

The Quebec Bridge

Let us tell you why.



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F. H. Hopkins & Co

Head Office:
MONTREAL

O'Malley-Beare Valve

3 or 4 Renewal Plates on Head
3 or 4 Renewal Plates on Seat

No Regrinding

If valve leaks, remove worn plates,

Presto!

A New Valve.

Marine Engines, Marine Boilers and Marine Electric Equipment

DAVENPORT WORKS

The largest General Engineering Works in Canada specially equipped for the manufacture of Marine Engine, Boilers, Pumps, Condensers, Capstans, Winches and Steering Engines.

CANADIAN ALLIS-CHALMERS, LIMITED

Head Office: KING and SIMCOE STREETS, TORONTO

PETERBORO WORKS

The largest Electrical Manufacturing Plant in Canada.
Electric Generators, Motors, Switchboards, Lamps, Fixtures, Wire and General Electric Supplies.

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Head Office: KING and SIMCOE STREETS, TORONTO

Nova Scotia Steel & Coal Co., Limited

Can manufacture forgings up to 40 tons in weight to all Admiralty and Lloyd's Tests and specifications.

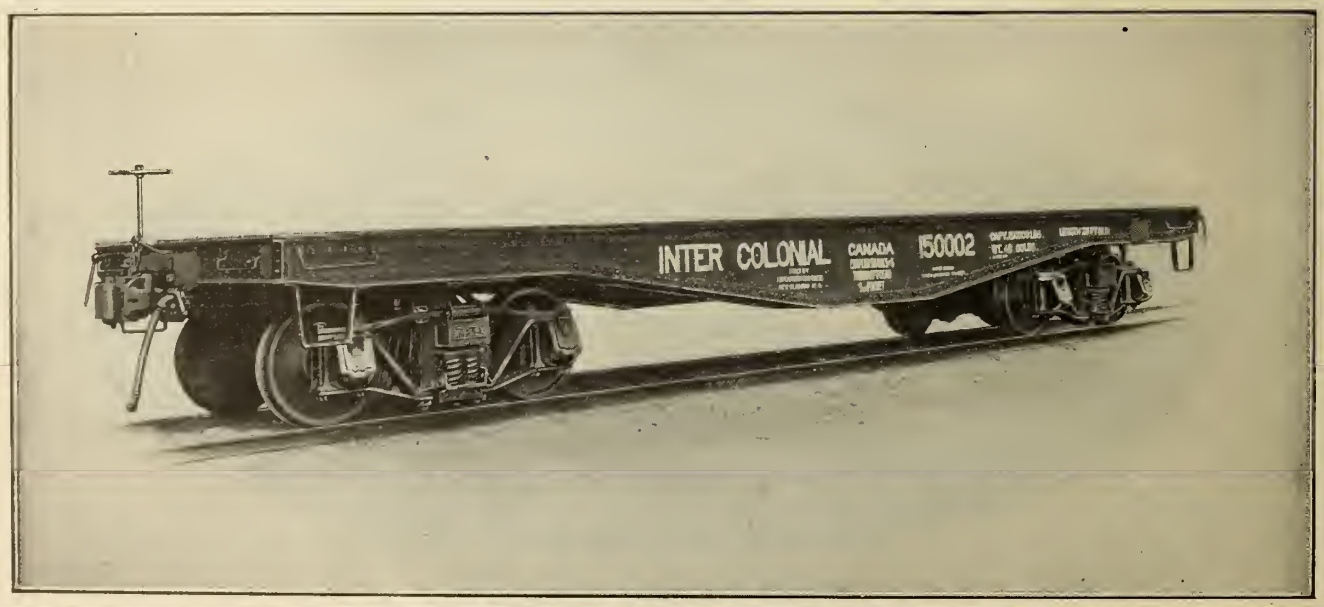
Also can supply forgings of all shapes and sizes made of ordinary or "Harmet" fluid compressed open-hearth steel, and satisfying the most severe specifications.

Our forges are modern in every respect—designed and installed after close study of the latest developments in all countries. Moreover, we produce the highest grades of steel by the most approved methods.

For prices and particulars write to

Head Office - - New Glasgow, Nova Scotia

Western Sales Office, Room 14, Windsor Hotel, Montreal



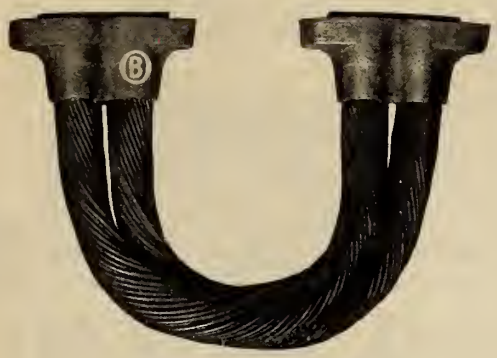
75 Ton Special Pit Car For Canadian Government Railways.

FLAT CARS, CABOOSES AND MINE CARS

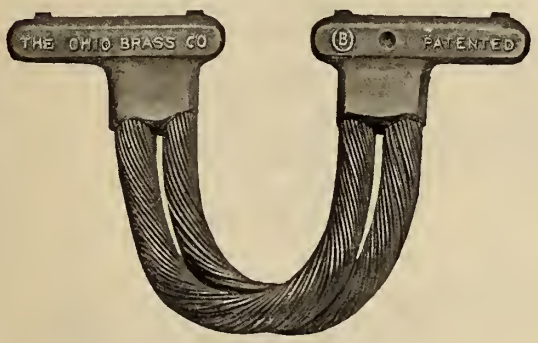
We make a specialty of Flat Cars, Cabooses and Mine Cars for both Home and Foreign Markets in Wood, Steel Frame or "All-Steel" and shall be pleased to quote against all capacity requirements and quantities.

Eastern Car Company, Limited

General Offices and Works, New Glasgow, N.S. **Montreal Office, Room 14 Windsor Hotel**



Type ST—(Steel Armored)
Method of applying protected by Canadian patent issued May 8, 1917.



Type GW—(All Copper)

Perfect Weld Easy With O-B Gas-Weld Bonds

As the operator welds an O-B Gas-Weld Bond to the rail he can see what he is doing at all times.

He watches the metal as it joins rail and bond and, with ordinary care, he gets a perfect weld every time. Special skill is not required.

When the terminal is finished it tapers toward the head of the rail and the resultant beveled shape is immune to damage from traffic.

O-B Gas-Weld Bonds were first in the field and were first used by a Canadian road. Their worth has been thoroughly demonstrated and there are hundreds of thousands in service on many different properties. Send for a booklet which illustrates and describes O-B Gas-Weld Bonding.

The Ohio Brass Company
Mansfield, Ohio

Make the Most of Travel

THE passenger to the Pacific Coast is to-day offered a choice of routes that renders it unnecessary to re-trace his steps and opens up a wealth of new scenery and outdoor sport.

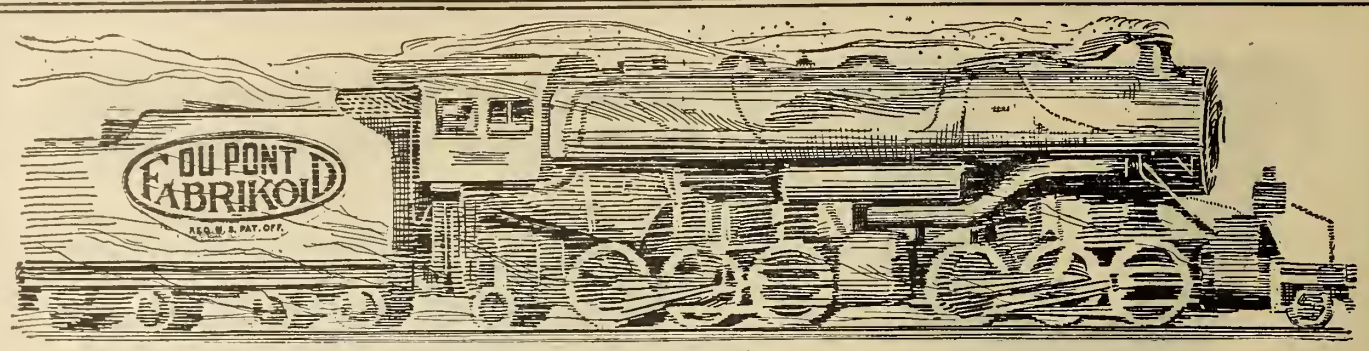
Do not fail to visit Jasper and Mount Robson Parks with their wonderful mountains, gorges, glaciers and cataracts.

Here the protection given to game has increased the quantity and reduced the fear of man.

Mountain sheep and goat, the most wary of animals, are seen feeding on the hills, and coming down to the railroad in view of passing trains.

For further particulars see our booklet "The Canadian Northern Rockies," or apply to General Passenger Department, Montreal, Quebec.; Toronto, Ont.; Winnipeg, Man.

CANADIAN NORTHERN RAILWAY



THE BEST ROAD TO REAL ECONOMY

IS VIA DU PONT FABRIKOID UPHOLSTERY

Fabrikoid Car Seats are

Beautiful
Serviceable
Sanitary

They effect a big saving in

Money
Material
Labor

Let Us Prove This to You With a Small Trial Order

DU PONT FABRIKOID CO. **WILMINGTON, DEL.**

Wendell & MacDuffie Co., Railway Department Representatives, 61 Broadway, New York

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TAYLOR & ARNOLD, LIMITED

with Offices in

TORONTO WINNIPEG VANCOUVER

Are now Exclusive Sales Agents in the Dominion of Canada for the

Dearborn Chemical Company of Canada, Limited

1220-1230 Dundas Street, TORONTO

This Ship's Capstan Reclaimed at a Saving of Nearly $200.

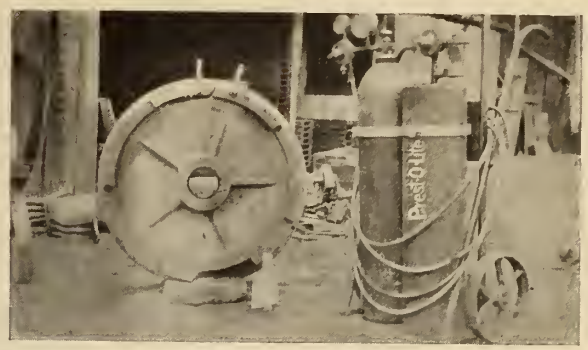
THIS illustration shows a broken ship's capstan repaired at a trifling expense by the Prest-O-Lite Process. The broken parts were welded into place and this 1090-lb. casting was made as good as new. The saving on this one job was nearly $200.

In almost every branch of manufacture the Prest-O-Lite Process of Oxy-Acetylene Welding and Cutting has proved itself to be the greatest economic factor known to mechanical art—a veritable revelation in cost-reducing and money-saving. Useful in every line of human endeavor where metal or machinery is produced, shaped, moulded, built or used.

In Shipbuilding Plants, Railroads, Steamship Lines, Mines and Factories, the Prest-O-Lite Process will effect many important savings. Costly tie-ups and delays, caused by the breakdown of an important machine, are avoided and valuable castings, tools and machine parts worth thousands of dollars are saved and quickly put back into service.

Prest-O-Lite PROCESS

employs both gases (acetylene and oxygen) in portable cylinders. Prest-O-Lite Dissolved Acetylene (ready-made carbide gas) is backed by Prest-O-Lite Service, which insures prompt exchange of full cylinders for empty ones. Provides dry, purified gas, insuring better welds, quicker work and lower operating cost.



Apparatus consists of an equal pressure blow pipe, automatic regulators and gauges, and all necessary equipment. Adaptable for oxy-acetylene cutting by the addition of special cutting blow pipe.

Thorough instructions are furnished free to every user of Prest-O-Lite Dissolved Acetylene. Any average workman who understands metals can learn the welding process quickly and easily.

We will gladly send illustrated literature and interesting data showing actual instances of savings made by others. It may suggest valuable ideas to you. Write for it.

Address Dept. C-109.

The Prest-O-Lite Co., Inc.

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DIRECT FACTORY BRANCHES:
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CANADIAN PLANTS: Toronto, Ont., Merritton, Ont.
Winnipeg, Man., Shawinigan Falls, P.Q.

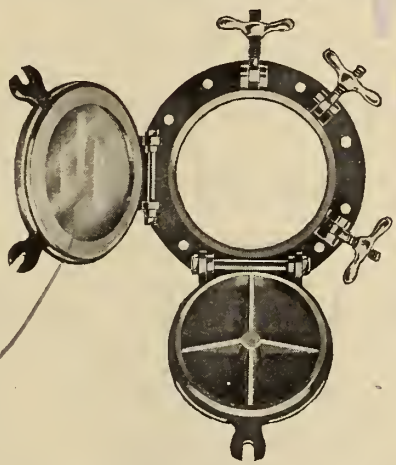
Established 1834 **Incorporated 1907**

Marine Specialties

Port or Side Lights

BRASS OR IRON

DONKEY SEA COCKS
DONKEY BLOW DOWN COCKS
DONKEY CHECK VALVES
MAIN FEED AND SHUT OFF VALVES COMBINED
MAIN INJECTION VALVES
THROTTLE VALVES
BILGE DISCHARGE VALVES
DONKEY DISCHARGE VALVES
EJECTOR DISCHARGE VALVES
MAIN DISCHARGE VALVES
BILGE INJECTION VALVES
STEAM VALVES
MARINE COCKS



WATER COLUMNS
WATER GAUGES
GAUGE COCKS
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RUDDER BRACES
DUMB BTACES
DOVE TAILS
STEERING WHEEL CAPS
SHEAVES AND BUSHINGS
SIGNAL AND BINNACLE BELLS
SHIPS' PUMPS
SHIPS' HARDWARE
SHIP CARPENTERS' TOOLS

Manufactured by

T. McAVITY & SONS, LIMITED

BRASS and IRON FOUNDERS
Wholesale and Retail Hardware, Marine Specialties, Etc.

ST. JOHN, N.B., Canada

Branches at: Montreal, Toronto, Winnipeg Vancouver, London, Eng.

Port Arthur Shipbuilding Co., Limited

Port Arthur, Canada

Designers and Builders of

STEEL SHIPS — BOILERS — ENGINES, Etc.

EVERY MODERN FACILITY AVAILABLE FOR REPAIR WORK

Dry Dock — 700 ft. x 98 ft. x 16 ft.

PLANT AT PORT ARTHUR, CANADA

In Stock for Immediate Delivery

Several 1st Class, New

CLAM SHELLS

1½ and 2 yards.

4 HOISTING ENGINES

8¼ in. x 10 in.—with Boilers.

Head Office and Plant

Port Arthur, Ontario

MALLEABLE CASTINGS

CAPACITY

Two Thousand Five Hundred Tons per Month

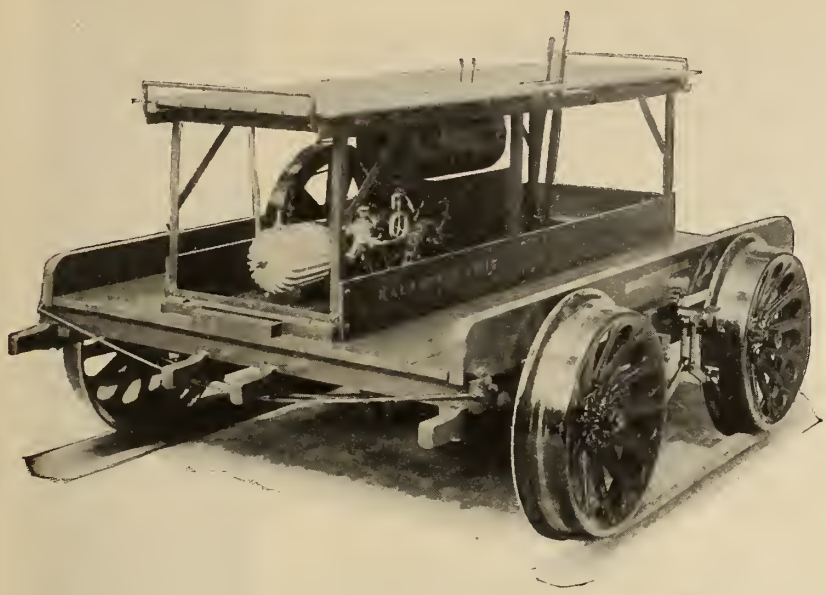
Our Prices, Quality and Delivery are Right

Send Us Your Inquiries

The Pratt & Letchworth Company, Limited

P. O. Box 1630, Montreal **Works, Brantford, Ont.**

Kalamazoo No. 17 Motor Car



For Section Gangs. A sturdy, easy-running car for rough use.

This section car is equipped with a single cylinder two-cycle air-cooled motor of five horse power. Motor is exceptionally smooth running; all vibration being eliminated and runs equally well in either direction.

Engine drives through short, heavy roller chain to perfected friction clutch on axle. Car is very light. Brake operates on all four wheels.

We manufacture a full line of railway motors for every purpose and would like to quote on your requirements. Hyatt roller bearings on all motor cars.

Kalamazoo Railway Supply Company

KALAMAZOO, MICH., U.S.A.

The Collingwood Shipbuilding Co.

Limited

COLLINGWOOD—ONTARIO—CANADA

Steel Ships, Engines, Boilers, Castings, and Forgings

PLANT FITTED WITH MODERN APPLIANCES FOR QUICK WORK

S.S. REGINOLITE

Two Dry Docks
and
Shops

EQUIPPED TO
OPERATE

Day or Night
on
Repairs

50 YEARS IN THE BUSINESS

You Don't Like to Shave With a Blunt Razor

It tries your temper and spoils your skin.

Then don't expect your men to file with blunt files.

It makes **them grouchy** and spoils **your** work.

That costs **you** money any way you look at it.

Give your men Famous Five files to work with, and you'll get good results because Famous Five files are hard, sharp and retain their keen cutting qualities for the longest time.

Remember this and specify them when ordering. They are:

Kearney & Foot **Great Western**
American **Arcade** **Globe**

Made in Canada by

The Nicholson File Company
PORT HOPE **ONTARIO**

OVER 60,000,000 FILES A YEAR

Norton Jacks

For all Classes of Service

10 to 100 Tons Capacity

In Stock for Immediate Shipment.

Send for Illustrated Catalogue No. 29.

A. O. Norton, Limited

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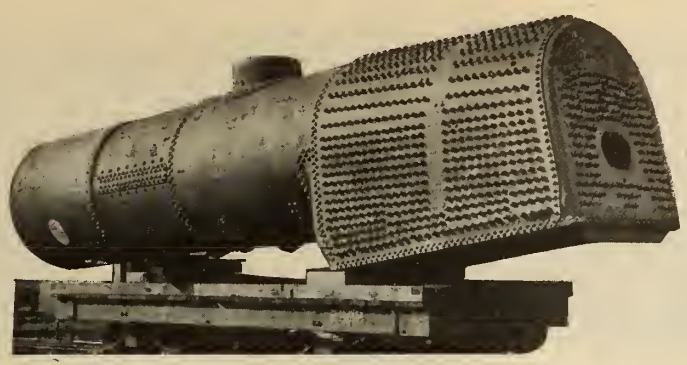


It is an Established Fact

That fireboxes of all types equipped with the Tate Flexible Staybolt show the lowest maintenance cost and highest earnings.

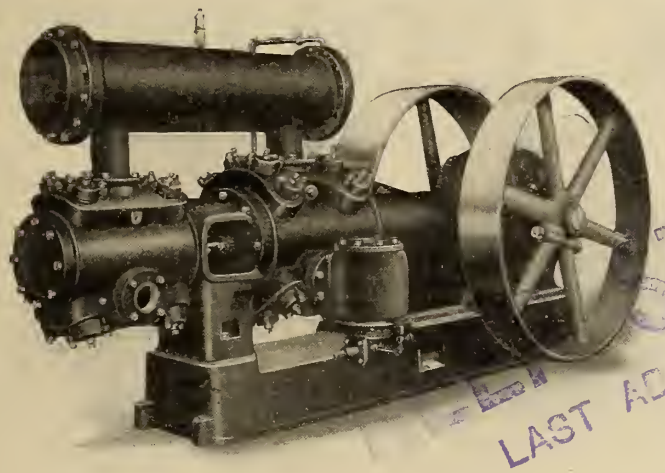
The Flexibility in the bolt serves to accomodate the relative expansion of plates under working operations of the fire box and boiler in a manner that has afforded less destruction to the sheets and seams than were found under conditions where fireboxes were rigidly stayed.

The Tate Flexible Staybolt is designed and made to give satisfactory results in the final measure of its usefullness as an economic, safe and reliable factor in reducing the costs of firebox repairs and maintainance.

In use on all the prominent railroad systems of Canada.

FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto Ont.



Class "EL 2" Power Driven, Two Stage, Straight Line Air Compressor, with Intercooler and unloader.

Points of Value

in "Circo" Leaf Valve Air Compressors:

Simplicity of Design,
Ease of Installation,
Dust-Proof Construction,
Automatic Splash Lubrication,
Liberal Water-Jacketing,
Ample Intercooler Surface,
Efficient, Silent Leaf Valves,

These points insure:

High Economy in use of Lubricant and Power.
The Lowest Expense for Attention while Running.
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In short ***Maximum Satisfaction at Minimum Outlay.***

Our Engineering and Sales Departments are at your service, and will be glad to discuss with you any compressed air problems that are before you. Write our nearest office.

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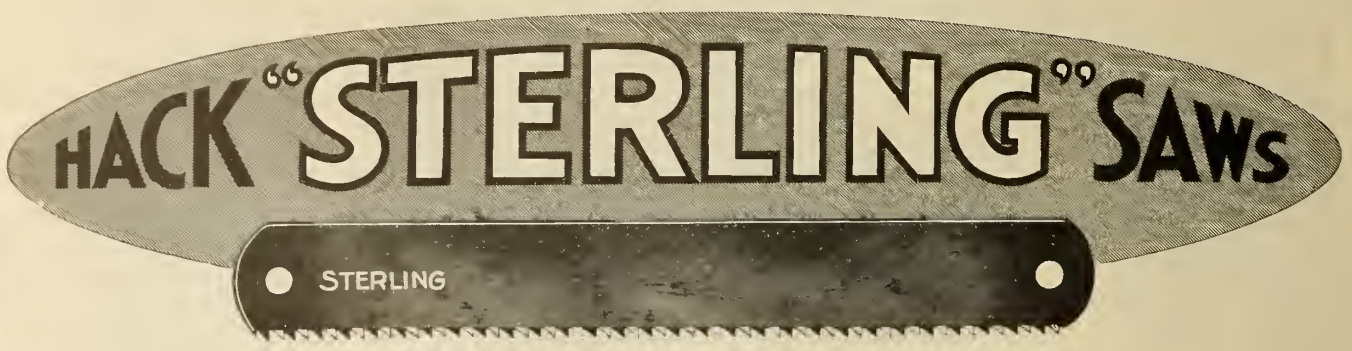
HACK "STERLING" SAWS



The "STERLING" Blade is a brand of highest quality, and is known the world over for its efficiency and economy. The best steel that can be procured is used in their production, together with skilled workmanship of many years experience, enabling us to give the trade a strictly first class blade. They are made in all lengths and widths from 8 by 1/2 inches to 36 by 2 inches inclusive, and in gauges to give best results, varying pitch of teeth to suit the job.

Money invested in "STERLING" Blades will give you full returns.

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That's Why 480 Railroad Shops Are Using Thermit

Thermit offers the only sure and reliable repair for locomotive frames and other heavy sections.

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The operation of welding locomotive frames is easily accomplished, without removing the the frame from position, and with very little dismantling, no matter if the frame be broken in the splice, jaw, next to the cylinder saddle, or at any other point. The engine is returned to service in from ten to twelve hours.

Hundreds of thousands of pounds of Thermit are being used annually by railroad companies in United States and Canada.

There is only one reason for this, and that is that Thermit produces results and we all know that "results count."

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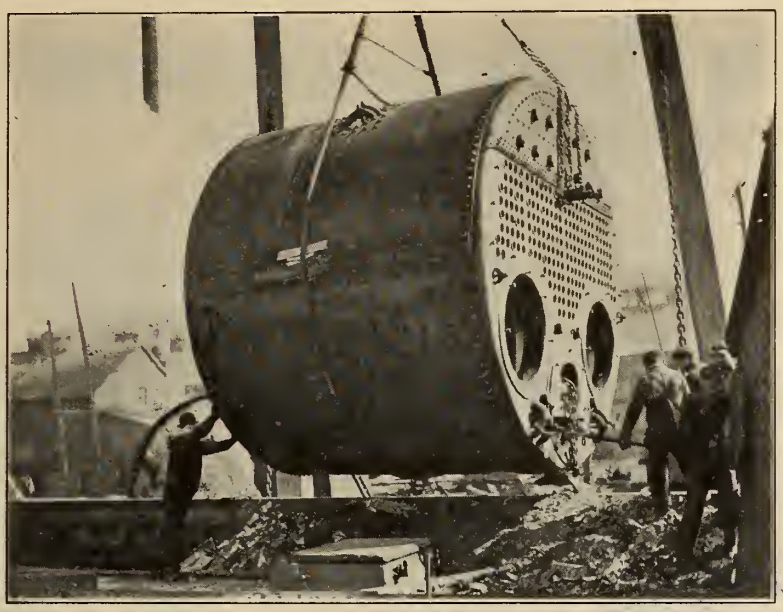

13 ft. x 11 ft. Clyde Boiler for Senator Derbyshire, weight 30 tons. Designed for a working pressure of 125 lbs., but allowed 131 lbs. by the Government Marine Inspector. This boiler has 212 tubes, including stay tubes 3½ inches diam. x 7 ft. 9 ins. long, three Morrison corrugated flanged furnaces of the "horse collar" withdrawal type, grates and smoke box. The steamer was laid under our shear leg at the close of navigation and the old boiler removed. Within 10 hours after the breaking up of the ice in our dock the new boiler was installed in the boat.

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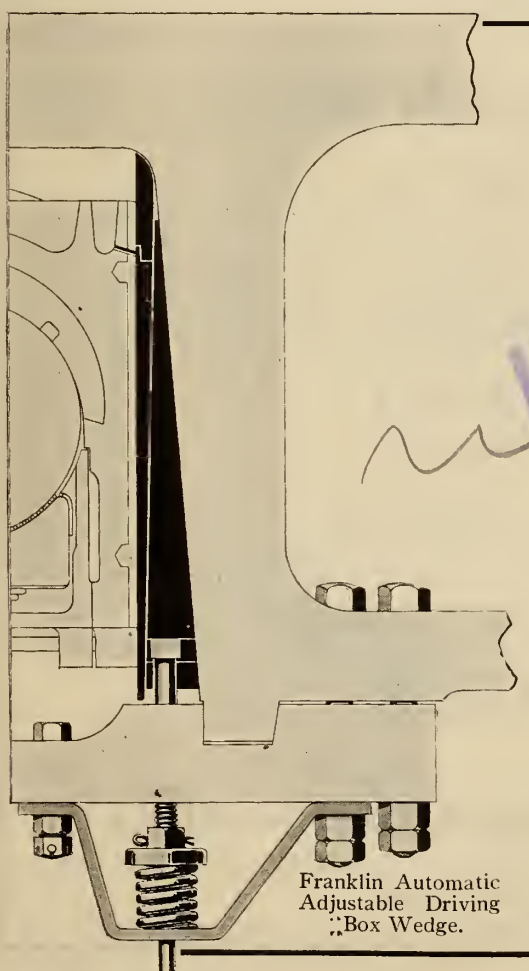

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"Franklin Automatic Adjustable Driving Box Wedges have given double the locomotive mileage without the necessity of renewing rod bushings.

"There is no device at the present time that has proven to be as beneficial towards eliminating heavy repairs and renewals to various parts of the locomotive caused by driving boxes pounding."

From a letter of a Superintendent of Motive Power to his Vice-President.

It resulted from a service test of the Franklin Wedge on two heavy freight engines.

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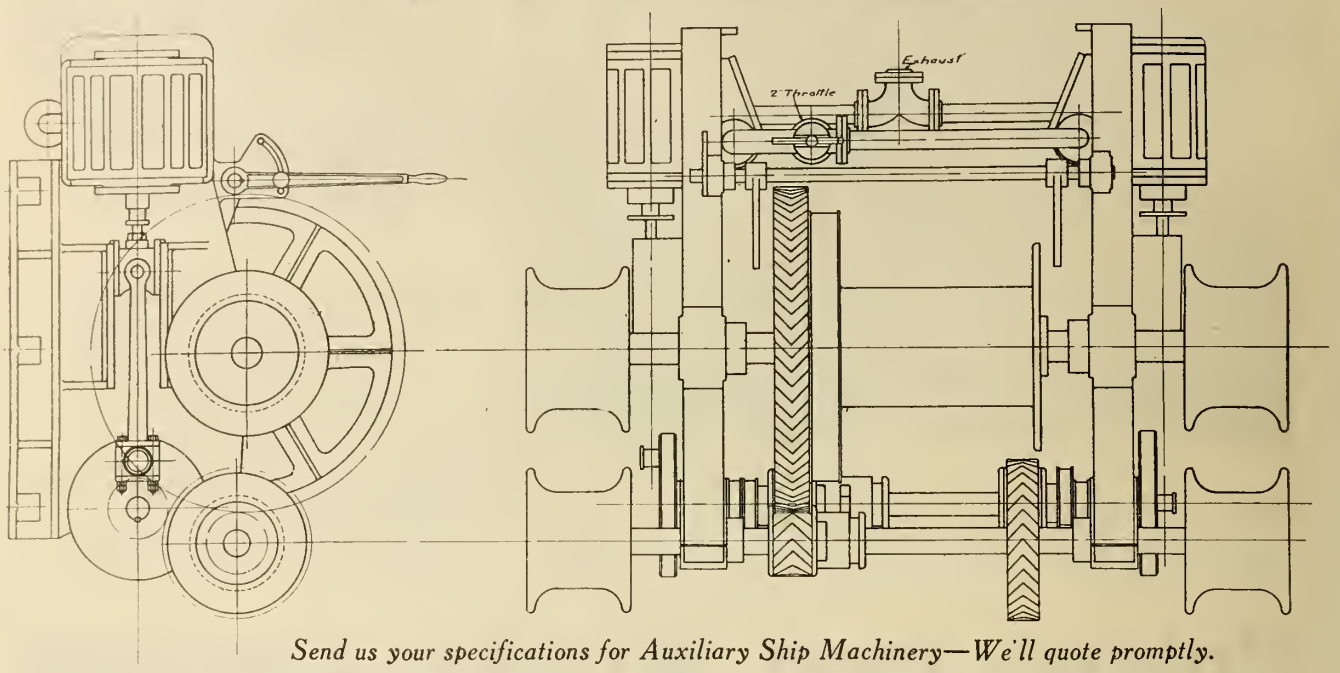

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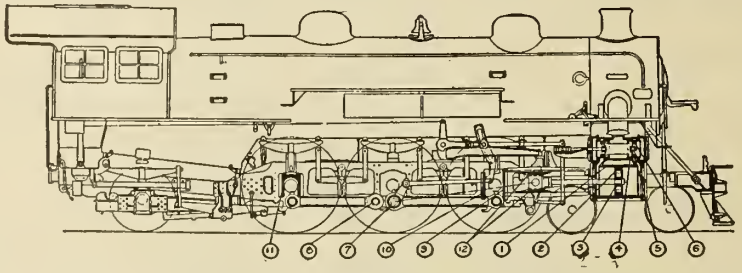

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For 12 of the Principal Parts of a Locomotive

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As a medium through which to obtain this condition, use in the above mentioned parts

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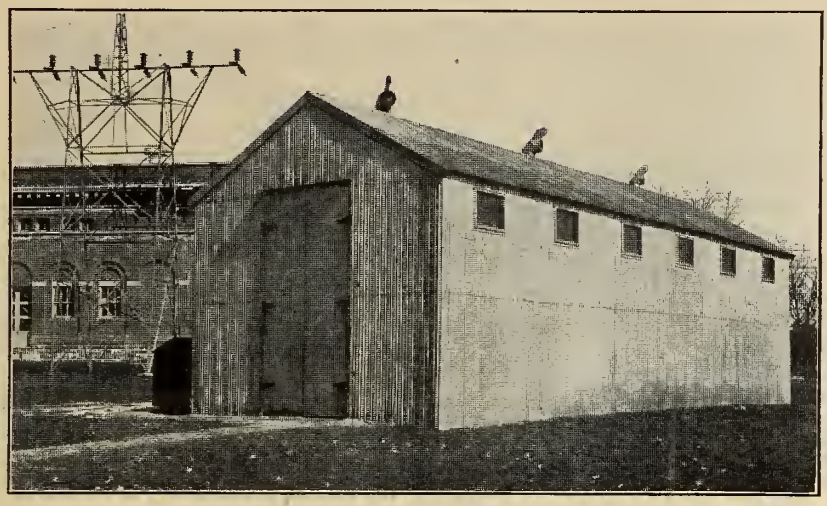

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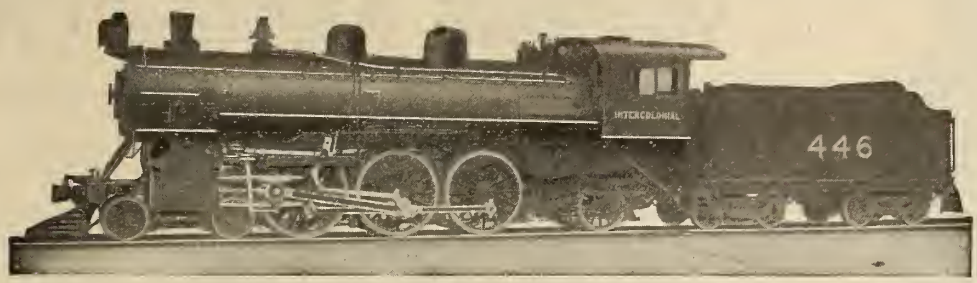

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Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

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We guarantee them to give satisfactory results if used as intended.

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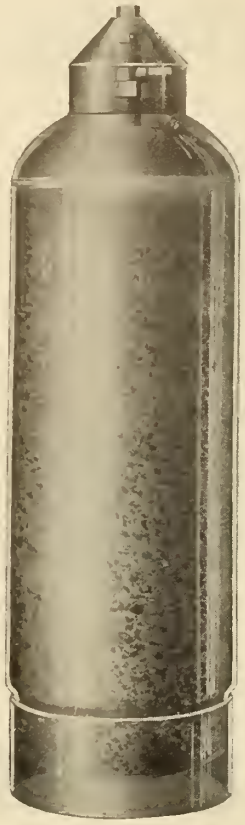

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The **Heater** protects all the load against frost in coldest weather. It constantly supplies fresh air and removes gases, fumes and odors. It keeps the load fresh and prevents wilt, shrivel, smoke, taint or freeze. It is operated from outside the car, is simple and requires no special attendant. It **can** be used in **any** refrigerator car, and **should** be used in **all** refrigerator cars.

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35 per cent is what your investment in high degree superheaters return.

Our Marine Engineers will promptly reply to your inquiries.

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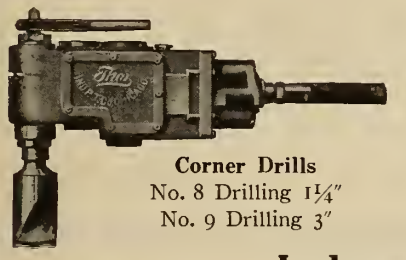

Corner Drills
No. 8 Drilling 1¼"
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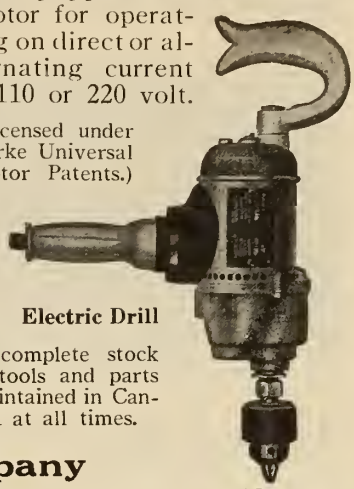

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These Reinforced Brake Shoes weighed approximately twenty pounds each when put in service. When ready for the scrap heap, after long and satisfactory use, they weighed about six pounds each.

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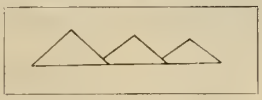
Let Three Pyramid Brushes

TRADE  MARK

Carry Your Load.

There is over twenty-five years' experience behind them.

Be sure that your motors and generators are running satisfactorily at their full rated capacities. This is true economy.

In the THREE PYRAMID line of brushes there is a grade that will meet your requirements for any class of service. This grade has proven its efficiency under actual operating tests.

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A New Apparatus for an old Method.

Light in Weight
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No rotating parts
No flame or arc strikes rail or bond
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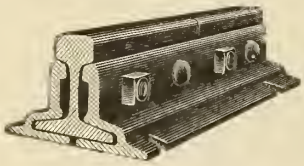

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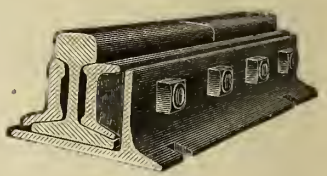
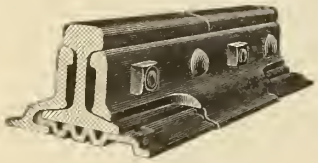


WEBER



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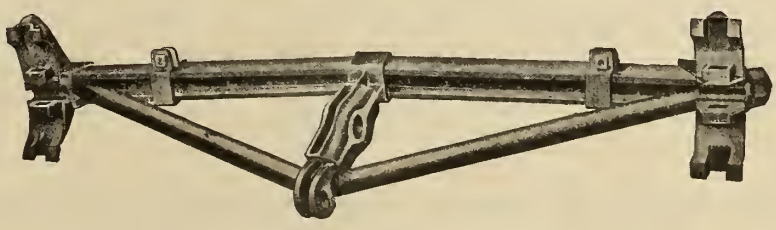

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Branches at Halifax, St. John, Quebec, Ottawa, Toronto, Hamilton, Kitchener, London, North Bay, Fort William, Winnipeg, Regina, Saskatoon, Calgary, Lethbridge, Edmonton, Vancouver, Victoria.

Largest Manufacturers of Rubber Goods in the British Empire

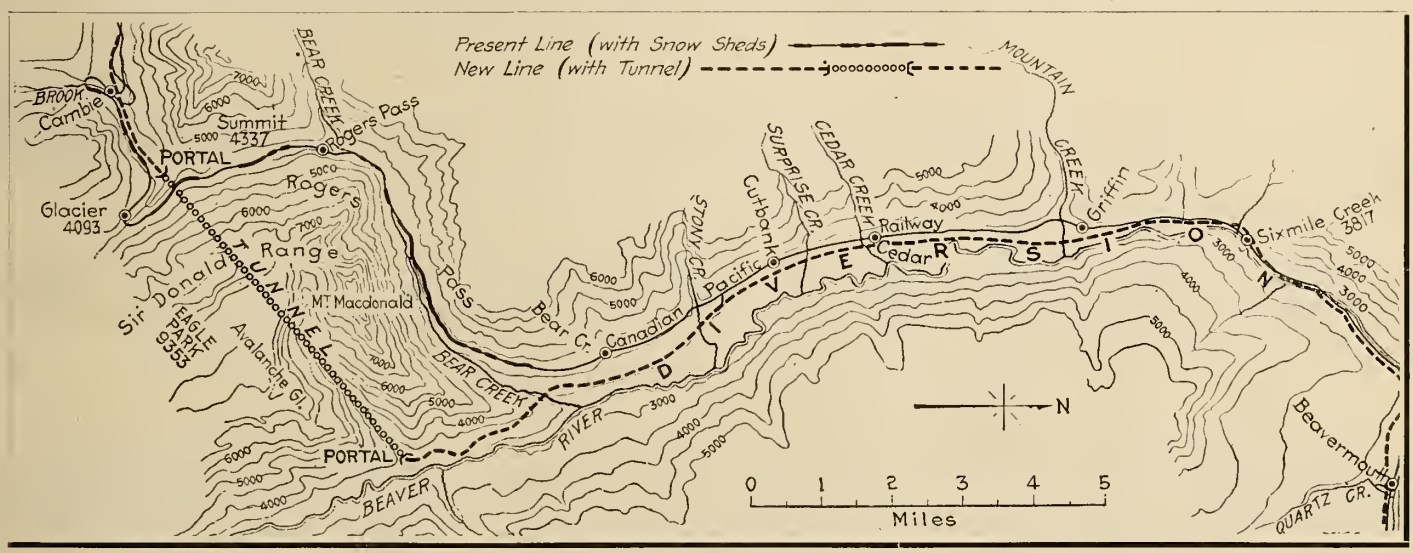
Canadian Railway and Marine World

December, 1917.

Salvaging the Canadian Pacific Railway's Old Line at Rogers Pass.

The five-mile Connaught tunnel, on the C.P.R. main line through the Selkirk Mountains in British Columbia, was opened for operation in Dec. 1916. Its use made possible the abandoning of the old main line over the Rogers Pass, with a consequent reduction in elevation of more than 500 ft. A large amount of curvature was also taken out and the distance considerably shortened. The old main line left the present line about three-quarters of a mile from the new tunnel's western portal, crossed the Illecillewaet River and Eagle Creek, followed the contour around the Cambie and Glacier loops, rising steadily on heavy grades through about two miles of snow sheds until the summit was reached at Rogers Pass. From Rogers Pass the line dropped to the east to certain specified points on the line, was to be taken to Donald, B.C., in the Columbia River valley, as this was the nearest place having space enough available to store the amount of material which it was estimated was to be saved. The turning point of the work was the necessity of finishing it before the first snow fell, as there was every chance that if part of the line was left unprotected through the winter, with long stretches of snow shed taken out, slides would make it impossible to go in again in the spring of 1918 and bring out the rest of the line. Before work began, in fact, three small slides, one of them about 250 ft. long, were found to have already occurred and had to be cleared before the line could be used for work trains.

Final decision to salvage the line was made by the C.P.R. late in July, and the last few days of the month were spent in repairing and refurnishing outfit cars, arranging for board and commissary matters and getting equipment ready for the work. It was estimated that snow enough to shut down the work might be expected any time after Oct. 15, and that there



Old and New Lines, Canadian Pacific Railway, at Rogers Pass, B.C.

sharply, and from one mile east of Rogers Pass to Bear Creek ran through practically continuous snow sheds for three miles and joined the new main line just east of Stony Creek.

The abandoned line comprised some 20 miles of track and sidings; 25,000 lin. ft. of snow sheds, and a considerable amount of miscellaneous property, including water and oil lines, telegraph lines, tool houses, water tanks, station buildings and locomotive house equipment at Rogers Pass. Due to the abnormal conditions created by the war, the C.P.R. desired to salvage everything that would justify the expense of recovery. The general plan for the work was, first, the salvaging of snow sheds on each side of the summit, working down the hill both ways from Rogers Pass. The cribbing was to be left, as it was too firmly embedded in the side of the hill to be pulled loose without breaking, in addition to the probability that if taken out it would bring down the hill with it. Track was to be taken up, when the snow sheds were far enough ahead, so that the track gangs would not overtake the snow shed gangs. Miscellaneous structures were to be taken out as most convenient. All material, except such as might be loaded and sent direct

The question of equipment was of first importance, due to the need for rapid work. It quickly developed that practically all the equipment would have to be improvised, as no standard equipment was available in the way of locomotive cranes or other rigs that might be used for wrecking the sheds. It was therefore decided to rely principally on skid derricks, working on top of or alongside the sheds. Eight of these were built, together with a derrick car, which was put together in Vancouver and shipped to the work. Overhead cable ways were considered, but believed to be too slow, particularly as it soon developed that the cribbing would stand if the sheds were removed, so that there was no immediate danger of slides and no need of keeping equipment up out of the way. A track laying machine was also considered for taking up track, but it was thought there was not sufficient work to justify its use.

At the unloading and storage yard at Donald, a small, quick handling, movable derrick, of about 2 tons capacity, was installed, and one larger stationary derrick, with an 80 ft. boom. Two reciprocating steam saws, with boilers, were set up for working the salvaged timber into shape. The sizes of the timber ran for the most part to 3 and 4 in. planks and 12, 14 and 16 in. square timbers from 20 to 30 ft. long. The timber was delivered on flat cars at Donald, the cars being picked up daily at the various points where the derricks were working, by C.P.R. work trains operating over the hill until the track was broken, and afterward on the west slope, down over the Cambie loop and through the tunnel to Donald.

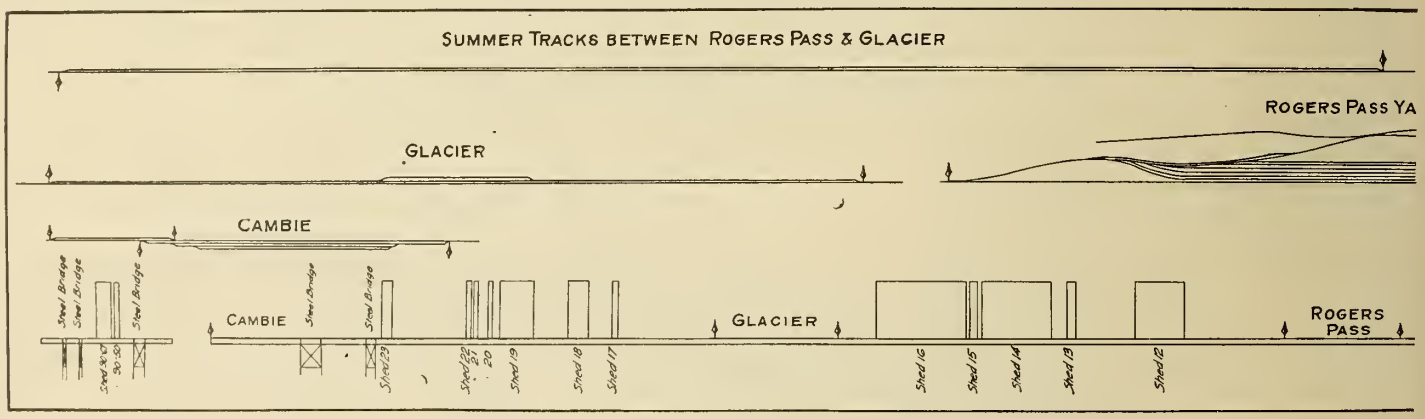
were, therefore, not more than 75 working days which could be safely counted upon. By the first week in August camps had been established at Cambie, Donald and Rogers Pass, and work had begun on the snow sheds at several points on the west slope. Labor, although none too good, appeared plentiful, but it was difficult to get prompt deliveries on much needed equipment. By the second week in August, however, work was well under way on the sheds and some track and locomotive house material had been shipped from Rogers Pass yards. By the third week, 3,700 lin. ft. of snow shed were either partly of wholly wrecked, but it was becoming very difficult to hold labor, due to the higher rates that were being paid in the harvest fields. Men would ship to Rogers Pass, work for a few days and then drift on to the east. Instead of 300 or more men estimated as necessary for progress, the number dropped to 150, and several times to not more than 100. By the end of August, however, 6,500 lin. ft. of sheds were wholly or partially down, two miles of track were up and a considerable amount of miscellaneous material had been loaded. Work was pushed with the small force available and by mid September seven

derricks were at work, and all of the snow sheds on the west slope had been salvaged, except one shed above the old Glacier station, which, on examination, was found to be worthless, and was marked for burning. Meanwhile the labor situation was slowly improving, as the harvest season advanced and more men drifted westward. During the next two weeks this improvement was reflected by increased progress, and by Oct. 1, 16,000 ft. of snow sheds had been partly or wholly salvaged.

The main line track was broken at Rogers Pass on Sept. 18, and by the end of the month 11½ miles of track were up, and the west slope was practically clear of material. Outfits were then shipped promptly to the east slope, and every effort concentrated upon getting down the hill ahead of the snow. Derricks were placed as close together as they could be economically operated, and the track gangs followed immediately after the derricks. During the next week four miles of track were taken up, about half a mile of snow sheds were wrecked, and a large amount of piping and miscellaneous material were saved. Small portable houses, salvaged previously, were set up at Glacier and Stony Creek. By Oct. 15, the date originally set as necessary to complete the work, 25,000 ft. of snow sheds, less 5,000 ft. marked for burning, had been salvaged; 18 out of 20 miles of track were up and all miscellaneeous work done except a little grubbing and burning. Equipment was loaded during the next few days, camps struck and forces reduced. On Oct. 18, the first snow fell at the pass.

The work was done for the C.P.R. by Sydney E. Junkins & Co., of Vancouver, under the direction of J. G. Sullivan, Chief Engineer, Winnipeg, and H. Rindal, District Engineer, Vancouver.

The accompanying chart will give an idea of the general layout of the work. The bridges will be taken out by another contractor, probably during this year.



Reclamation of Rogers Pass Line Material for Canadian Pacific Railway.

U. S. Shipment of Licensed Articles to Canada.—To facilitate shipment of certain commodities from the U. S. to Canada and Newfoundland, there has heretofore been issued through the U. S. customs service, a special license whereby goods have been permitted to leave without an individual license for each shipment, except in the case of commodities which it has been found necessary to conserve, and for the exportation of which individual licenses have been required as announced from time to time. Several additions have been made to the list, for which individual licenses will be required for each shipment, as from Oct. 20.

Birthdays of Transportation Men in December.

Many happy returns of the day to:—

E. T. Agate, M.Can.Soc.C.E., ex.Assistant Superintendent Lake Superior Division, Canadian Northern Ry., Capreol, Ont., now of Pittsford, N.Y., born there, Dec. 7, 1874.

A. G. Albertson, City Ticket Agent, C. P. R., San Francisco, Cal., born at Copenhagen, Denmark, Dec. 31, 1887.

J. H. Barber, M.Can.Soc.C.E., Engineer, double track, C.P.R., Toronto, born at Cobourg, Ont., Dec. 20, 1856.

N. E. Brooks, M.Can.Soc.C.E., ex-Engineer of Maintenance of Way, Western Lines, C.P.R., now at Sherbrooke, Que., born there, Dec. 25, 1866.

W. W. Butler, Vice President and Managing Director, Canadian Car and Foundry Co.. Montreal, born at Danville, Ohio, Dec. 9, 1862.

J. M. Cameron, General Superintendent, Alberta District, C.P.R., Calgary, born at Lochabar, N.S., Dec. 18, 1867.

W. C. Casey, General Agent, Passenger Department, Canadian Pacific Ocean Services, Ltd., Winnipeg born at Moncton, N.B., Dec. 12, 1882.

G. W. Caye, General Purchasing Agent, G.T.R., Montreal, born at Malone, N.Y., Dec. 1, 1865.

G. C. Gahan, Assistant General Auditor, C.P.R., Montreal, born there Dec. 28, 1874.

W. H. Gardiner, City Freight Agent, C.P.R., and District Freight Agent, Esquimalt and Nanaimo Ry., Victoria, B.C., born there Dec. 6, 1859.

A. S. Goodeve, member Board of Railway Commissioners for Canada, born at Guelph, Ont., Dec. 15, 1860.

A. J. Gorrie, ex-Superintendent District 1, Transcontinental Division, Canadian Government Railways, Quebec, now with Algoma Steel Corporation, Sault Ste. Marie, Ont., born at Raith, Kirkcaldy, Scotland, Dec. 10, 1868.

W. H. Grant, General Tie and Timber Agent, and acting General Storekeeper, Eastern Lines, Canadian Northern Ry., Toronto, born at Acton, Ont., Dec. 8, 1858.

F. P. Gutelius, M.Can.Soc.C.E., Vice President and General Manager, Delaware & Hudson Co., Albany, N.Y., born at Mifflinburg, Pa., Dec. 21, 1864.

Jas. H. Hall, President, Westerian Transportation Co., Ltd., Ottawa, Ont., born at Hawkesbury, Ont., Dec. 20, 1863.

J. T. Hallisey, Superintendent, District 6, Intercolonial Division, Canadian Government Railways, Truro, N.S., born at Beaver Bank, N.S., Dec. 29, 1862.

D. B. Hanna, Third Vice President, Canadian Northern Ry., Toronto, born at Thornliebank, Scotland, Dec. 20, 1858.

R. W. D. Harris, Trainmaster, Moose Jaw Division, Saskatchewan District, C. P.R., Moose Jaw, born at Victoria, B.C., Dec. 12, 1879.

J. J. Hennigar, Agent, Great Lakes Transportation Co., Windsor, Ont., born at Topeka, Kan., Dec. 21, 1884.

A. J. Isbester, ex Assistant District Engineer, Port Arthur District, Canadian Northern Ry., Port Arthur, Ont., born at Ottawa, Dec. 18, 1879.

L. S. Landers, Assistant Engineer, Canadian Government Railways, Levis, Que., born at Farnham, Que., Dec. 15, 1888.

J. T. McGrath, ex-Superintendent of Motive Power and Equipment, Chicago and Alton Rd., Bloomington, Ill., born at Toronto, Dec. 6, 1869.

A. T. McKean, Division Freight Agent, C.P.R., Winnipeg, born at St. John, N.B., Dec. 18, 1886.

E. S. McMillan, Road Foreman of Locomotives, G.T.R., Montreal, born there, Dec. 14, 1880.

J. M. MacArthur, Superintendent, Kenora Division, Manitoba District, Kenora, Ont., born at Toronto, Dec. 8, 1885.

A. E. Macdonald, General Claims Agent, Canadian Northern Ry., Winnipeg, born at Woolwich, Eng., Dec. 11, 1870.

L. Macdonald, Division Freight Agent, G.T.R., Toronto, born at Montreal, Dec. 10, 1871.

A. D. MacTier, General Manager, Eastern Lines, C.P.R., Montreal, born at Blairgowrie, Scotland, Dec. 27, 1867.

J. C. O'Donnell, Superintendent, Divisions 2 and 3, Central District, Canadian Northern Ry., Winnipeg, born at Cobden, Ont., Dec. 17, 1879.

S. R. Payne, Manager, Ottawa Division, New York Central Rd., Ottawa, Ont., born at Jefferson, Ohio, Dec. 21, 1865.

Alfred Price, Assistant General Manager, Eastern Lines, C.P.R., Montreal, born at Toronto, Dec. 6, 1861.

W. J. Radford, Assistant to General Manager, Toronto Suburban Ry., Toronto, born at Boldre, Hants., Eng., Dec. 23, 1870.

G. D. Robinson, Export Freight Agent, C.P.R., Montreal, born at St. John, N.B., Dec. 7, 1877.

Sir Collingwood Schreiber, K.C.M.G., Hon. Mem. Can.Soc.C.E., General Consulting Engineer to Dominion Government, Ottawa, Ont., born at Bradwell, Essex, Eng., Dec. 14, 1831.

W. Tansley, Superintendent, Laurentian Division, Quebec District, Montreal, born at Shelburne, Ont., Dec. 27, 1872.

M. F. Tompkins, Division Freight Agent, Intercolonial Division Canadian

Government Railways, Halifax, N.S., born at Margaree, N.S., Dec. 6, 1878.

H. H. Vaughan, M.Can.Soc.C.E., Consulting Engineer, C.P.R.. Montreal, Vice President, Dominion Bridge Co. and Vice President and Managing Director Dominion Copper Products Co., born at Forest Hill, Essex, Eng., Dec. 26, 1868.

R. C. Vaughan, Assistant to Third Vice President, Canadian Northern Ry., Toronto, born there, Dec. 1, 1883.

A. P. Walker, M.Can.Soc.C.E., Assistant Engineer, Ontario District, C.P.R., Toronto, born at West Hartlepool, Eng., Dec. 9, 1860.

E. H. Wood, Foreman, Michigan Central Rd., Kensington, Ill., born at St. John, N.B., Dec. 30, 1880.

Fuel Economy as Related to its use in Steam Boilers and Locomotives.

By S. H. Pudney, Fuel Inspector, Eastern Lines, Canadian Pacific Railway.

In the first two articles on this subject the losses of fuel during its combustion were shown by relating to various tests that have been made, also to actual practice in the use of fuel. There is no doubt that such losses do occur because it has been shown that by the use of certain devices a saving of even up to 25% has been made, and no saving could have been made if there was no loss before. Now the question arises, what can be done to overcome these losses and enable us to get the greatest possible efficiency from the fuel we use, and thereby not only save money but conserve our fuel and also reduce the car shortage. There never was a time when the shortage of cars of the class that is used to carry coal was so serious, and very few of us realize what the effect of a saving of fuel would mean in this line. If a 10% saving was effected in the use of fuel on Canadian railways alone, it would mean that 18,000 cars could be released for one trip, or that about 2,000 cars could be released from this service altogether. This one item alone should make us go to greater lengths to get better efficiency, to say nothing of the six or seven millions of dollars that would be saved. To make this saving we have only to do, as was said before, viz., to follow out the rules that govern the perfect combustion of fuel.

There are a great many authorities on this subject and they all say the same thing as regards the better use of fuel. The University of Illinois, through Professors Parr and Olin, have made some important researches on the coking of fuel at low temperatures, and in a bulletin, in speaking of the combustion of coal, they quote Prof. Bone, who is recognized as one of the highest authorities on this subject, as follows: "Other conditions, such as accelerating the reaction by introducing the principle of surface combustion, may at some time be added to the mechanical and physical conditions now in vogue in the use of fuel."

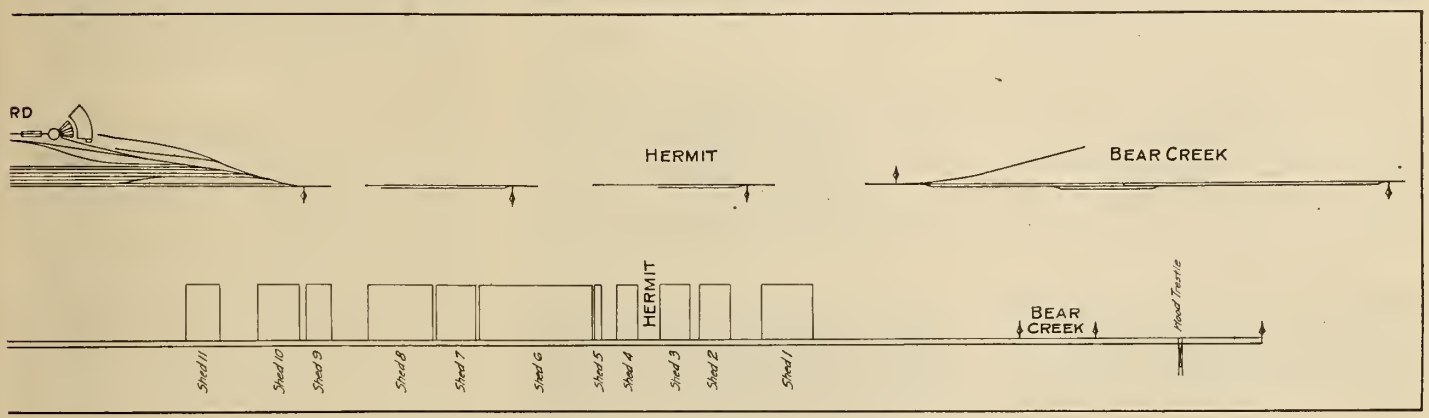
In the burning of fuel there are two distinct processes. The first action, or process, is the burning of the fuel on the grates, which, in passing through the fuel bed, takes up more carbon and at the surface has a large proportion of CO. A large proportion of the flame that is given off at the surface of the fuel bed is also unsaturated gas. The second process, or reaction, is the combination of the CO. with oxygen to form CO^2 with an increase of 10,000 b.t.u.'s for every pound of carbon that undergoes such reaction, also the breaking down or reaction of the gases or flame into their individual elements to combine with oxygen, so that in this term they evidently mean that as nearly all these gases where this reaction has to take place are at the surface of the fuel bed, the best results can only be obtained when some sort of surface combustion is carried out, or in other words, oxygen of the air must be administered to the gases independently of that which comes through the fuel bed.

Mr. Fox, a well known writer and specialist on black smoke in Chicago, says that air admitted through the fire door and allowed to pass over the surface of the fuel is the best remedy for smoke. An investigation was carried out by the United States Geological Survey, under the charge of D. T. Randell and H. H. Weeks, who, after making a considerable number of tests with different classes of boilers and furnaces, said that they found that air admitted through the fire door freely, at the time of firing and for a short period thereafter, was productive of a more perfect combustion of the gases and less smoke. These statements, made by men who had only one object in view, viz., to find out the truth, cannot be doubted. I have made some considerable experiments in this line myself and have found their statements to be correct.

Most locomotive men have had enough experience in this line to know the results. For instance, at terminal points and stations, the rule is invariably to open the fire door enough to consume the smoke. Of course, it is not possible to open a fire box door while the locomotive is running under load or trouble would soon occur, due to leaking flues. But there is one thing which a fireman does that proves to all who understand locomotive practice that the idea of surface combustion is correct and will eliminate smoke. No doubt many have seen a fireman take his coal scoop and open the fire door, then put his scoop in the fire door hole bottom up, turning it from side to side, deflecting the incoming air down over his fire. He does this so that he may be able to see the condition of his fire and can in this way see any banks or holes that may be forming in his fire box and remedy them at the next time of firing. He naturally considers that in doing this the air rushing in blows the smoke and gases away so that he can see his fire. But what really does occur is that the air, going in through the door, is being deflected down to the surface of the fuel and is performing the process of surface combustion, and the gases are all combining with oxygen at that point, so that combustion is complete. As the perfect combustion of fuel is without smoke or color at the spot where it is going on, he can see through the products of perfect combustion and note the condition of his fire. This proves again that surface combustion is the right remedy for smokeless and perfect combustion and the proper thing for fuel economy.

The proper way to admit air in a locomotive fire box for surface combustion is so that it may have the best possible chance to mix with the gases that are being liberated from the fuel, and where they may have the longest possible travel before reaching the flues. This means that it must be admitted at the door. The air going in must be deflected down in such a manner that it will come in contact with the gases at the moment they are liberated from the surface of the fuel, because at moment they are practically in their nascent condition, and in that condition all chemical action, or reaction, is more rapid and complete. That this can be done in our locomotives has been demonstrated fully, and it is quite possible to so equip them that we should be able at a trifling expense to save at least 10% of the fuel used at present.

In the article I mentioned that I considered much better results could be obtained in the combustion of fuel and that this could be done with a larger exhaust



Reclamation of Rogers Pass Line Material for Canadian Pacific Railway.

outlet than is at present in use, which in turn would give a greater working capacity to our locomotives. The exhaust outlet's function is to produce sufficient draft to consume enough fuel to raise the necessary steam sufficient to haul the train over the road. Under present conditions this draft, or air, has to be produced through the fuel bed, which offers a great resistance to the incoming air and consequently a greater force has to be exerted than would have to be if the resistance was less. If we consume the gases that are being wasted, both as smoke and CO, with air that is, or can be, let in through the door, when there is absolutely no resistance, we will get this extra efficiency without any effort on the part of our drafting appliance, and will release that much work from our exhaust outlet. Another feature is that if we increase the efficiency of our fuel 10% by this means, we shall not need to consume so much by that amount. This again reduces the amount of work needed to be performed by our exhaust outlet. Consequently if we can reduce the amount of work done under existing conditions, we can naturally increase the size of the exhaust in proportion. The back pressure exerted upon the cylinders, by a reduced exhaust outlet, is greater than most of us think of and any increase in size will make a more efficient working locomotive. Therefore, if surface combustion is carried out, and especially with the aid of the brick arch, there is no doubt that a permanent decrease of 10% to 15% in railway fuel bills would occur, and with the best feature of all, a permanent abolition of the black smoke nuisance.

Quebec Central Railway Company's Annual Report.

Following are extracts from the report for the year ended June 30:

Freight revenue	$1,215,001.08
Passenger revenue	445,919.44
Mails	28,285.64
Express, miscellaneous, etc.	36,821.56
	$1,726,027.72
Maintenance of way and structures	$243,224.51
Maintenance of equipment	172,066.87
Traffic expenses	28,678.94
Transportation expenses	672,661.39
General expenses	59,926.06
Taxes	15,046.24
Expenses outside operations	15,797.03
Total operating expenses	$1,207,401.04
Balance carried to net revenue account	518,626.68
	$1,726,027.72

To the $518,626.68 transferred from revenue account to net revenue account was added $15,427.18, making a total of $534,053.86. Out of this was paid $255,-560.94 for interest on debenture stock and 3rd mortgage bonds, leaving $276,-492.92 to be transferred to surplus income account, which, added to $85,132.23 balance from 1915-1916, made a total of $361,625.15. From this was paid 5% interest on share capital, $169,080.16, leaving a surplus of $192,544.99.

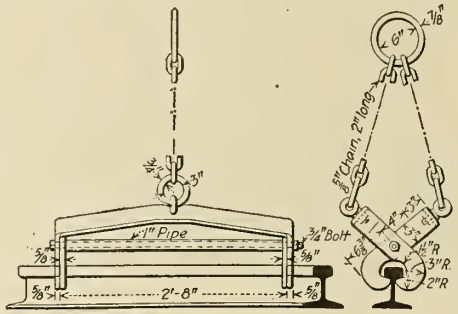
The directors are: Sir George Bury, President; I. G. Ogden, Vice President; E. W. Beatty, Montreal; J. H. Walsh, General Manager, Sherbrooke, Que.; T. Lindley and C. D. Brassey, London, Eng. L. A. Carrier, Levis, represents the Quebec Government on the board.

Under an agreement dated Oct. 2, 1912, the company's property was leased to the C.P.R. for 999 years at a guaranteed rental based upon interest on the mortgage bonds, and 4 dividend on the outstanding stock for five years from July 1, 1912, and 5 after.

Special Tongs Prevent Rails from Seesawing While Being Handled.

The accompanying sketch shows some simple rail tongs which have been developed on the Atchison, Topeka & Santa Fe Ry., and which have given good service, according to W. Barnes, Supervisor of Work Equipment at Topeka, Kan.

The length of these tongs, 2 ft. 8 in. between grips, is found sufficient to prevent rails from seesawing while being handled by a crane. The main part of the tongs is made from ⅝ x 3 in. soft



Tongs Hold Rails Steady in Handling.

steel, the jaws being hinged on a ¾ in. bolt with a 1 in. pipe spreader. Each half of the tongs is connected by a 2 ft. length of ⅝ in. chain to a large ring, which is hooked to the hoisting line.

United States Taxes on Transportation Tickets Etc.

The United States Government started on Nov. 1 to levy a tax of 8% on the amount paid by passengers for transportation on railways or steamships and 10% on the amount paid for seats, berths and staterooms in parlor cars, sleeping cars, or on vessels. The tax does not apply on commutation tickets for trips less than 30 miles, nor on passage tickets where the fare is 35c or less. The tax applies on tickets sold in the United States to points in that country, Canada or Mexico, and is assessed upon the total amount paid for transportation to destination and not on the amount paid for passage within the United States only. The tax is collected by ticket agents, who are required under the law to decline to issue tickets to persons who refuse to pay the tax. This tax does not apply on tickets issued in Canada to points in the United States, only the Canadian tax of 5c up to 15c and 1% over that being collected on passage tickets, with tax of 10c per berth on sleeping car tickets, and 5c on parlor car fares.

A tax of 3% is levied on all amounts for carriage of milk, skim milk, buttermilk, pot cheese, cream, condensed milk and evaporated milk in baggage car service, also newspapers carried in baggage cars, wholly in the U. S., or from one point in the U. S. to another point in the U. S. through Canada or Mexico.

A tax of 8% is levied on amounts paid for excess baggage.

Lt. Col. Blair Ripley, M.Can.Soc.C.E., formerly Engineer of Track Elevation, C. P.R., North Toronto, now officer commanding, 1st Battalion, Canadian Railway Troops, in Belgium, writes: "I am always pleased to open Canadian Railway and Marine World when it reaches me. It keeps me in touch with things at home, in a matter of fact way, and is passed around to the boys, all of whom appreciate it."

Railway Bridge and Building Men's Convention.

The American Railway Bridge and Building Association's convention held at Chicago recently, was largely attended.

The placing of new plate girder spans with the minimum interruption to traffic was dealt with in a committee report presented by Lee Jutton, Division Engineer, Chicago & Northwestern Ry. Two general methods are practicable: Piecemeal removal of the old and construction of the new spans, or the replacing of an entire span at one operation. Mentioned in the discussion that followed was the erection of concrete slab spans alongside the old work, with ballast and track complete. In this way the track could be connected up as soon as the new span had been moved into place.

Paint for steel and other structures was covered in a report presented by C. Ettinger, Illinois Central Rd. For steel work, he considered that the primer or first coat should be a rust-inhibitive coating with lead base. Carbon paints may be applied over this, but should not be applied directly to the steel. The report pointed out the economy of using high class paint for structures of this kind.

Concrete as a protective coating for steel structures was presented in a paper by E. E. R. Tratman, Western Editor, Engineering News-Record.

The importance of good housing and feeding as a means of keeping men in the crews of the railway bridge and maintenance of way departments was the subject of a paper by F. E. Weise, chief clerk, Chicago, Milwaukee & St. Paul Ry. engineering department. There are many objections to the use of cars, which are generally old cars removed from their trucks and mounted on sills. Buildings of concrete or of stucco on wire mesh are used in a few cases. Some railways and construction companies are introducing portable sectional knock-down houses. Most of these are of wood, but sectional steel structures for similar purposes are available.

Another subject discussed in regard to labor was the introduction of differential rates of pay for employes; that is, paying higher rates to men having the greater skill or experience.

A considerable number of women are employed by the C.P.R. on its Western Lines. Clerical positions in the general offices, freight offices and yard offices, vacated by men, have been filled by women. It was thought that women could not be used to advantage in yard offices, owing to the possibility that they might have to listen to objectionable language on the part of some men. No difficulty whatever has been found in this respect, the women having invariably been treated with every courtesy and respect. A number of women are being employed at Winnipeg, as passenger car cleaners, and are giving complete satisfaction. At Regina nine women were employed cutting grass and weeds in the yards, for about two wecks, and gave good satisfaction, but the management is not convinced, however, that women can be successfully used as ordinary track maintainers.

The Canadian Society of Civil Engineers', Regina branch has petitioned the Saskatchewan Government to restrict the practice of civil engineering to members of the Society.

Draft Gears on Railway Rolling Stock.

By Louis E. Endsley, Professor, University of Pittsburg, Pa.

Draft gears have been much discussed by railway people for a great many years, and there are many phases of this subject. The attempt will be made in this paper to give a few points that appeal to me in regard to this subject. There are three things that draft gears may do in the handling of railway cars. These may be divided in general as follows: (1) Produce slack in starting trains. (2) Control slack in the movement of trains. (3) Reduce the impact force in the switching of cars. In all of these the principle involved is the same, viz., producing the same speed in two cars that may be coming together, or going apart, because of differences of speed. The draft gear, to be effective in doing this, must have a capacity that is relative to the difference in speed. What I mean by this is that for a difference of speed of, say, one mile an hour, a draft gear of small capacity will suffice, but if the difference in speed is four miles an hour, it will take a much larger draft gear, namely, 16 times as large, to prevent a shock, for the energy of a moving body is proportional to the square of its velocity.

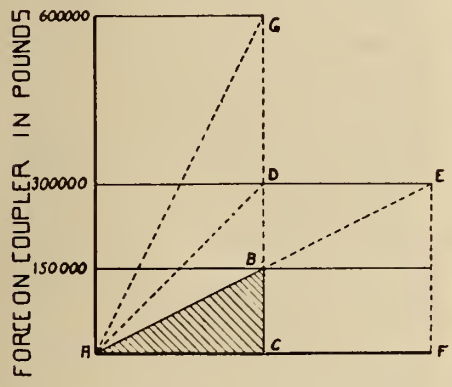


Fig. 1. Travel of draft gear.

Draft gear capacity is the number of foot-pounds of work required to just close the draft gear, that is, it can be represented by an area, as shown in Fig. 1. The lower line of the chart in fig 1 represents the travel of the draft gear and the upper distance represents the force on the coupler until the draft gear closes and the horn strikes. This is the force on the draft gear. Now, if we assume a draft gear with a travel of 2 in., or from A to C in this figure, a final pressure of 150,000 lb., or from C to B. and that the pressure necessary to close the gear under discussion was directly proportional to the movement, the line of action of the gear would be a straight line, and would be represented by AB. The capacity of the gear then would be represented by area ABC. If we wish to increase the capacity without increasing the slope of the line AB, we must increase the travel, and if we should increase the travel to double that shown in the shaded area, we would have four times as much capacity as we had before. That is, if AC equal half of AF, the area ABC is one fourth of AEF. If we wish to increase the capacity of the gear and not the travel, we will have to increase the slope of line AB to AD, in order to keep this pressure 300,000 lb. or below, and will only get an area represented by ADC, which is only twice that of ABC. The slope of the line AD is much greater than of the line AB, and should we want to get four times as much area as we had in ABC and still have the same travel, we will have to increase the pressure to 600,000 lb., and then the area of AGC will be four times ABC, or area AGC will equal AEF, and the capacity of these two gears will be the same. The 2 in. travel gear will have twice the final force that the one with the 4 in. travel will have. This final force is what a great many people have called the capacity of a draft gear. The comparison shown in fig 1 is ideal. I think it would be almost impossible to construct a draft gear that has a slope equal to line AG. But this figure was merely given to illustrate the advantage of long travel gears.

As I said before, if we have a draft gear that has a capacity equal to one fourth the difference of energy of two cars in impact, the cars will not receive a shock above the maximum force necessary to close the gear. That is, if a car is going four miles an hour and strikes a car standing still, it will produce in the standing car approximately half of the speed of the moving car, or, in other words, put into the standing car one fourth of the energy that was originally in the rolling car. The rolling car will retain approximately one fourth, and coast down with the second car, but half the energy is gone and it must be absorbed in the draft gear or some part of the underframe. Of course, some of this energy may be absorbed, due to the shifting of the load, but it must be destroyed in some manner. If it is not done in the draft gear, it is bound to be done on the underframe or the coupler.

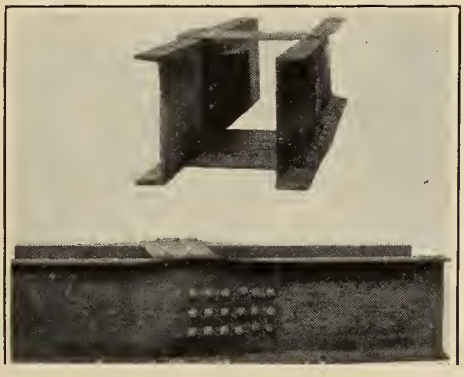


Fig. 2.

This shifting of the load amounts to considerable, in some kinds of freight, such as coal and ore. If the load should shift 1 in., this would be equal to increasing the draft gear travel 1 in.; also, any give in the underframe would be equal to increasing the travel of the draft gear. There is considerable difference in the give of cars. Steel cars only give half as much as wooden cars below the elastic limit, assuming that both have the same ultimate strength. This is one thing that has been entering into wooden car construction. There has been considerable give in the bolt holes, between the draft timbers and sills. Thus the car itself has been absorbing the shock and there has not been as much need for a draft gear of a large capacity. But when we are now using all steel cars, with no give in the rivets, the draft gear must do all the work of absorbing the difference in energy between the two cars coming together in impact, or the coupler or some other part of the car will have to do it. If the coupler is stronger than the other part of the underframe, the underframe will have to do it.

In order to illustrate what energy is necessary to be absorbed for different speeds of cars in switching service, table 1 is given. Column 1 of this table gives the speed in miles per hour; column 2 gives the foot-pounds of energy in the moving car at the speed given in column 1; column 3 gives the capacity of the draft gear that should be used in each car for the speed represented in column 1 for two cars weighing loaded 150,000 lb.; column 4 gives the height of drop that the 9,000 lb. hammer should fall before it shears off 19/32 in. rivets to have the capacity given in column 3. This column was obtained by multiplying the values in column 3 by 12 and dividing by 9,000 and adding 3. The first part of this deduction is to obtain the height of drop to close the draft gear. The 3 added at the end is the added height in inches that it will take to shear off the rivets after the full capacity of the draft gear has been taken up.

Table I—Comparison of car, total weight 15,000 lb.

Speed in miles per hour	Approxi- energy in foot-pounds	Capacity of gear in foot-pounds to just close	Approx. height of drop of 9,000 hammer to shear nine 19/32 rivets
1	5,000	1,250	4.7 in.
2	20,000	5,000	9.7 in.
3	45,000	11,250	18.0 in.
4	80,000	20,000	28.7 in.
5	125,000	31,250	44.7 in.
6	180,000	45,000	63.0 in.

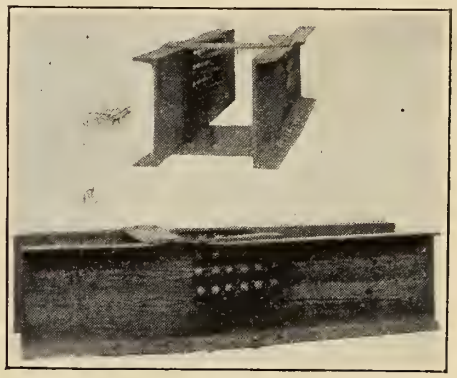


Fig. 3.

It will be seen that a very small capacity is necessary for one mile an hour, namely, a drop of 4.7 in. of the hammer, but a draft gear that is many times as large is required for a difference in speed of 6 miles an hour, or 63 in. This height should be the total fall of the hammer to just touch the dummy coupler used, plus the travel of the draft gear. That is, if the fall of the hammer was 15 in. before it started to close the gear, and the travel of the gear was 3 in., the total capacity of the gear would be represented by 18 in. I, personally, think that we should take care of four miles an hour switching speed in the draft gear design. If we should do this, that is, if the draft gear would just close under a speed of four miles an hour and never close under a speed of less than that, it is certain that the coupler or any part of the car would

never be damaged in an impact between two cars at a speed of four miles an hour. There is not a coupler on the market but that will stand a greater impact force than the force necessary to close any draft gear on the market today. I have given some heights of drop that a 9,000 lb. hammer should fall before it shears off one or both lugs with nine rivets 19-32 in. in diameter. This method of testing draft gears was first used, I think, in Sept. 1908, by the Westinghouse Airbrake Co., but there 9/16 in. rivets were used. To my mind, this is the best method of determining the capacity of a draft gear. In this method of testing, the draft gear is mounted on two lugs, that are riveted to two short pieces of channels and held upright between posts. Each lug has nine rivets, each 19/32 in. in diameter, each lug carries half of the load, and the test is made by dropping the 9,000 lb. hammer from 1 in., 2 in., 3 in., and so on, until one lug is sheared off. This shearing of these rivets occurs at a pressure of about 275,000 lb. I say about 275,000 lb. for that is the average pressure that I obtained on several sets of lugs.

Now, when the 9,000 lb. hammer drops vertically on a draft gear that is supported on these two lugs that rest on a solid base with these same rivets in the lugs, they will not shear off until an approximate pressure of 275,000 lb. is reached, and in a good many tests with the same draft gear and different sets of lugs, the variation is never more than 1 in. That is, if a given gear shears off at a 16 in. drop, it might go 15 in. at another test, or if it shears off at 24 one time, it might go to 25 on another set of lugs. In other words, the variation is very small. I have conducted a test of a certain draft gear of a given make that sheared off three sets of lugs at exactly the same height, which means that this method of testing is bound to give very accurate comparison of the capacity of different draft gears.

Up to this time, in this paper, I have been talking of draft gear capacity and have not mentioned the absorbing capacity. I wish to distinguish between these two at this point. In the first part of this paper, I defined draft gear capacity as the foot-pound of work necessary to close the gear. The absorbing capacity is that which is not given back when the draft gear is released after being closed. This feature of a draft gear can be very easily obtained from the drop of the 9,000 lb. hammer by putting a recording pencil on the hammer and causing it to mark on a revolving drum. If the hammer falls 20 in., and rebounds, say 10 in., it is evident that the absorption has been half the capacity. This feature of the draft gear comes into play in the controlling of the slack of a long train in going up and down grades and in the starting and stopping of trains. If the slack should run in, and is not absorbed by the draft gear, it would run out under almost the same speed minus only that absorbed in the journal and rail.

This brings me to a point that I have often made, and that is, that we cannot expect a draft gear to last the life of the car, any more than we can expect a brake shoe to last the life of the car. They both are put on a car for the same purpose, viz., to stop it and if we expect to get any value from our brake shoes, we must expect wear. No one has discovered a metal that has any absorption of work by sliding on some other material that does not wear. Of course, some metal wears more than others under the same absorption. Some years ago I made some tests for the M. C. B. A. brake shoe committee and I found some shoes with the same coefficient of friction that varied as much as 300% in the loss of weight in doing a given amount of work. Here is a very good field for the draft gear companies. In my brake shoe committee work, we found that the loss of metal decreased very fast, as the pressure increased and the coefficient of friction decreased as the pressure increased. If we want to increase the life of a brake shoe we must increase its area. Now we are putting two shoes on a wheel and getting a saving in both. There is the same field in draft gears. We should keep the pressure between the wearing surface as low as possible and this can be done by making it as large as possible. But in no case would it pay to put enough brake shoes on a car to last as long as the car, and I think the same can be said about the draft gear.

Another thing which may be of interest is the results of some tests which I have just made in regard to the centre line of draft. Some time ago the committee on car construction made some recommendations with regard to the centre line of draft. These recommendations, when applied to most cars, fixed the centre line of draft within 2 or 3 in. of the centre of the sill. In order to get some information on this subject six sets of channels were made up. A photographic reproduction of two of them after the tests are shown in figs 2 and 3. The channels were each 15 in. high and weighed 40 lb. per foot. The centre line of draft of one set was placed on the centre of the channel of 7½ in. from the edge, and this distance from the edge was decreased by 1¼ in. until 2½ in. was obtained. Two sets of channels, with the centre line of draft 6¼ in. from the edge, were made, one set of which did not have any tie plate. The results obtained are given in table 2.

Table 2—Maximum pressure obtained in impact test made on 15 inch 40 lb. channel with 15,000 pendulum hammer with different centre line of draft.

Distance from edge of channel.	Maximum pressure obtained before the channel failed.
7½ in.	1,155,000 lbs.
6¼ in.	1,125,000 lbs.
5 in.	960,000 lbs.
3¾ in.	723,000 lbs.
2½ in.	662,000 lbs.
6¼ in. without tie plate	744,000 lbs.

It is evident from this table that the centre line of draft should be for maximum strength within 2 in. of the centre line of the sills, and that the tie plates are of great value in strengthening the sills. By looking at fig 2 it will be seen that when the line of draft is on the centre, both upper and lower flanges are bending, while with the line of draft 3¾ in. from the edge, as shown in fig 3, nearly all of the bending is at a place in the edge of the channel closest to the line of draft. This is nothing extraordinary, for if you eccentrically load any two pieces of steel, the one close to the load is going to take most of the work and the ultimate strength of the system is reduced.

I have attempted in this paper to bring forward two or three very important things in the selection of draft gears and the design of freight cars. One of the most important things is, we will have to increase the travel of the draft gear above that thought sufficient some years ago when it was felt that 2 or 2¼ in. was as much travel as we should have. But I am ready today to say that we should have at least 4 in. of travel, or possibly more, in any draft gear. It is evident from the first of my paper that this arrangement is going to allow us to materially increase the capacity of the draft gear when we design it under four or more inch travel.

Another thing that is of importance to railway men today is, how are they going to know what capacity of draft gear they are getting. I am confident that the best method for them to use is the rivet shearing test, as already described. Whether it be nine rivets 9/16, ten rivets of 9/16, or any other number of rivets, does not enter into the subject. What they should have is a set of lugs that will shear just above the force which is necessary to close the gear under test. I can conceive how a gear can be designed for a final pressure of 350,000 lb., then a test of rivets shearing off at 275,000 lb. would not be fair. But in any design of a lug, the lug should be made much stronger than the rivets, in order that the lugs will not bend down and the gear show a false capacity. I can see how a lug may be built and give false capacity of draft gear, but the lugs should be designed stronger than the rivets. I have not found a draft gear today but that will close before it shears off nine 19/32 in. rivets. There may be some, however, on the market.

One thing that is important in the design of a freight car is that the underframe of the car should be made stronger than the coupler. It has been the coupler in the past that has been saving the car after the draft gear went solid. Men who repair cars appreciate the large number of couplers that fail. I am wondering if when we put on the new M. C. B. coupler, it is not going to be the underframe of the car instead of the coupler that is going to fail when the draft gear goes solid. Especially is this true if we move the centre line of draft out from the centre of the sills or leave off the tie plate, as shown in the latter part of this paper, because then the pressure of only 662,000 lb. destroys the sills with the centre line of draft 2½ in. from edge of channel. The new coupler will stand this and more in compression, which means that it will not be the coupler, but the underframe, and if the underframe, it will cost considerably more to replace than the coupler. I assume that everybody here knows that a friction draft gear is superior to a spring gear, but I do not believe that all of you know how much this difference is. The highest capacity spring gear in use, made of two M. C. B. class G springs will fully protect your 100,000 lb. car and lading, at a switching speed of a little less than two miles an hour. There are friction draft gears in general use on thousands of cars that will protect this same car and lading at 4.5 miles an hour. Also, there are many gears on the market that will fall between these two extremes and each of these gears has a definite speed at which it will protect the car. But if you should attempt to switch your cars at four miles an hour while equipped with a spring draft gear, that only protects the car at a little less than two miles an hour, the coupler, underframe and lading are bound to suffer. Either the coupler or underframe will fall if this speed of switching is kept up, while, should this same car be equipped with the highest capacity gear, spoken of above, it could be switched at four miles an hour without any damage to underframe or coupler.

Unless we put a draft gear of sufficient capacity to keep it from going solid, the force is going to the strength of the weakest part. If this is the coupler it will be from 400,000 to 700,000 lb. on

most couplers in service, or if the car be equipped with the new M. C. B. coupler type D, this force will be from 600,000 to 1,000,000 lb. If it be the underframe that is weakest, and this may occur if the design is not correct, this pressure will be a little less than that given above for the strength of the coupler. But in any case, this force may be 600,000 lb. If the impact force and shock is 600,000 lb. and the weight of the car 150,000 lb., the end pressure per pound of car weight and lading will be 4 lb per pound of weight, or will be equivalent to standing a car on end that has four times as much load in it as the car in question contained. This is what has been knocking out ends of cars, damaging roofs, side walls, and racking the car in general because of insufficient draft gear protection. If the travel and capacity of the draft gear is enough to keep this end force down to 300,000 lb. the force per pound of weight on the car and lading will only be 2 lb., which would result in practically no damage to the car.

More care must be given draft gear, in the manner of inspection and repairs, in order that it may do the work which it was put on for, and which it will do if kept in repair. It may mean new gears or parts of gears, and there will be some expense attached to this inspection and upkeep, but the saving in repairs to other parts of the car is bound to more than make up for this expense.

The foregoing paper was read before the Canadian Railway Club in Montreal, recently.

The Maintenance of Railway Turntables.

By G. C. Lightner, Formerly Assistant Engineer, Canadian Government Railways, Moncton, N.B.

The turntable is one of the most important and at the same time one of the most neglected of terminal facilities. When the table is in good working order locomotives are moved in and out of the locomotive house with ease. On the other hand, when the table works hard, or is put out of commission, movements are delayed; and one delay usually causes another, continuing from the terminal out on to the line, until altogether many hours are lost and considerable needless expense incurred. I say needless expense advisedly, for, as the old provery has it, "An ounce of prevention is worth a pound of cure," and a very small portion of this amount, if well spent in advance, would prevent the loss both of time and money. The resident engineer and maintenance forces of the district are directly responsible for maintaining the table in good working order, but the locomotive house foreman must assist by observing its condition daily and immediately reporting any faults to the bridge and building master. Generally, so long as a table will turn at all, no attention is given it. Then when small defects, grown large, seriously interfere with efficient operation, it may prove an expensive matter to correct; whereas, if taken at the start, repairs could probably have been cheaply and quickly made. The maintenance department should not, however, depend on the locomotive house men for advice regarding a table, but should examine it periodically. The resident engineer ought to examine each table on his district in the spring and autumn; the bridge and building master and his foremen whenever they are in the vicinity.

The care and adjustment of a table may be divided into several headings: Centre bearing; elevation of tracks and clearances; levels and twists; foundations, drainage, etc.; steel; deck; snow, ice, etc.; tractor. The centre bearing consists of a set of conical rollers or balls, running in oil between two castings. If the table is jacked up, and the balls or rollers taken out, and thoroughly cleaned, and put back in fresh lubricant twice a year, and proper oil is added from time to time, the bearing should need no further attention. In a few of the older tables the balls are rather too small to successfully carry our present heavy locomotives. These centres are, however, being gradually changed to the roller type, and in the meantime they require more attention and some replacing of broken balls.

The most common fault with our turntables is improper adjustment a sto elevation of tracks. A table will deflect when fully loaded from one half to three quarters of an inch at each end. The tracks leading to the table should all be at absolutely the same elevation all around the pit wall. The table should then be high enough so that when balanced with load the rails on the table will be 1 in. to 1¼ in. above the rails on the pit walls at each end. The circle rail must be at the elevation to give exactly as much clearance under the end rollers as the rails on the table are higher than those on the pit walls, or from 1 in. to 1¼ in. That is, the difference in level between the circle rail and the rail on the pit wall must be exactly the same as the depth of the table end from top of rail to underside of end roller. This is important. If these dimensions match, the rail on the table wall will be flush on top with the rail on the pit wall when a locomotive is going on or off. If these dimensions do not agree, one rail will be higher than the other, which causes damage to the rails and makes possible a derailment.

Unfortunately frost will interfere with the most nicely adjusted table by heaving the pit walls. But when it does, do not adze down the circle rail ties as is usually done, for that only makes matters worse. It is very much easier to jack up the table a few inches (block under one end and jack up the other) and put a steel shim on the centre casting under the loading girder. Remember, when a pit wall heaves, it carries the track on top of the pit wall up as well as the circle rail, and their difference in elevation is not altered by the frost action. Lowering the circle rail does alter it and spoils the job. Shimming up the table restores the lost clearance under the end wheels and leaves the table in correct adjustment. If heaving is unequal, the table must be shimmed high enough to clear the circle rail at its highest points. Do not monkey with the ties with an adze. The effects of frost can be largely avoided by proper drainage. Often putting a porous filling of coarse cinders or gravel behind the circle wall with a good tile drain will reduce heaving very largely. The pit floor ought to be kept clean and smooth and the drain open to avoid collection of water in the pit.

Light tables sometimes develop a twist or warp. When this happens it can be readily detected even if slight, by noting the clearance under the end wheels, then turning the table exactly end for end and again noting the clearance. If the centre pier is exactly level, the difference in the clearances will be the amount of the twist. If the pier is not level, the difference will be due to both causes. Turn the table at right angles to its former position and repeat. A comparison of results in the four positions will give the amount of twist and the amount and direction of slope to the pier.

If the pier is not level the only remedy is to lift the table, centre and all, and dress the pier top. The twist can be then corrected by putting enough shims between the end roller boxes and the steel girders to make the bottom of all four corners level and the depth from top of rail on table to bottom of roller the same at both ends. This will throw the deck out of level, and that can be corrected by framing the deck ties properly. When these shims are once put in they must not be altered or removed except by proper authority, and that only when tests show that the amount of warp in the girders has altered.

The steel girders, floor system and bracing require frequent cleaning and painting. On too many of our tables the outside of the girders have been well painted and the less accessible parts inside allowed to become dirty and rusty. Whenever painting is done the cleaning and scraping of the steel must be especially thorough, on account of the large opportunity for the collection of wet dirt and refuse on the steel, and the many corners difficult to clean. Locomotive men can help on this point by not starting their injectors and by leaving all the valves closed while on the table, so as to avoid as far as possible dripping water on to the steelwork.

The deck of a turntable usually requires little or no care, except that when the end heights are not correct, the end ties get pounded to pieces quickly. A number of tables have a walk on the deck, consisting of one or two stout planks; some have the deck entirely covered with light boards. The latter is especially undesirable from a maintenance standpoint. When the deck is covered, the steel underneath is kept almost constantly wet and does not get a chance to dry out and inspection is rendered difficult. If any walk at all is on the table is should be away from the girders or stringers, so that the steel may be readily cleaned. However, the turntable is intended for use in turning locomotives and not as a footbridge across the pit, and if the area around the pit is kept clear and in shape, there is no necessity whatever for anyone walking across the table except to get to the centre for inspection and repairs. Any plank walk is therefore unnecessary, as well as detrimental to the table.

In winter snow and ice collect in the pits and interfere with operation. The duty of cleaning out the pit devolves on the trackmen, but the locomotive house force should give them assistance at all times. Generally in winter, when a table is reported as working hard, the trouble, if not due to heaving of foundations, is found to be caused by an accumulation of ice around the centre. In severe weather this should be watched and ice cleared out as fast as it forms, instead of allowing it to collect until it becomes a nuisance.

Where tables are operated by air mo-

tors, the care of the motor and accessories devolves on the locomotive house staff. They should periodically examine and overhaul all parts of it. If they allow a tractor to get out of repaiar so that they have to turn locomotives by man power it is their own fault. A tractor generally needs very little attention, but like all machinery, requires care.

Where several departmental organizations are jointly responsible for anything, as in the case of turntables, they each frequently form the habit of waiting on the others to take action. If the locomotive house and maintenance forces will only form the habit of co-operation, the turntables will all be kept in much better shape with much less work and will afford the minimum of inconvenience to all concerned. Get together!—Canadian Government Railways Employes Magazine.

The writer of the foregoing paper is now a lieutenant in the United States Expeditionary Force for overseas service.

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 207. Oct. 26.—Further amending general order 203, Aug. 11, re transportation of dangerous articles other than explosives.

General order 208. Oct. 25.—Rescinding general order 173, Oct. 26, 1916, in so far as it rescinds general order 152, Nov. 2, 1915; and allowing tolls for use of refrigerator cars for carriage of vegetables, provided by said tariffs re-filed and as authorized by general order 152.

General order 209. Nov. 13.—Approving Supplement 10 to Canadian Freight Classification 16, cancelling and superseding Supplements 1, 3, 4, 5, 6A, 7, 8, and 9, all previously approved.

General order 210. Nov. 13.—Dismissing complaints of Winnipeg, Calgary, Regina and Saskatoon Boards of Trade and Canadian Manufacturers' Association against tariffs, C.R.C. 3 and 4, effective Sept. 1, on behalf of railway companies providing incerased all-rail freight rates from Eastern Canada to Port Arthur and west.

26668. Oct. 18.—Approving location of G.T.R. station at Lyster, Que.; work to be completed by Dec. 15.

26669. Oct. 22.—Authorizing G.T.R. to use bridge 32 over Maitland River at Wingham, Ont.

26670. Oct. 19.—Ordering Edmonton, Dunvegan & British Columbia Ry. to complete station at Donnelly, Alta., by Dec. 15.

26671. Oct. 22.—Disallowing tolls filed by Canadian Northern Ry., C.P.R., and Grand Trunk Pacific Ry. for switching freight on which they respectively have received, or are to receive, a line haul—the tolls being charged because switch movement exceeds 1,000 ft.

26672. Oct. 19.—Authorizing Halifax & South Western Ry. to build spur for Yarmouth Trading Co., Yarmouth, N.S.

26673. Oct. 25.—Authorizing C.P.R. to build connection and extension to spurs for City of Montreal at mileage 4.5, Lachute Subdivision, Montreal Terminals.

26674. Oct. 25.—Authorizing G.T.R. to build spur for British Forgings, Ltd., Toronto.

26675. Oct. 3.—Authorizing Grand Trunk Pacific Ry. to build highway crossing over its track at 2nd Ave. North, Regina, Sask.; and rescinding order 13830, May 22, 1911, authorizing crossing of 1st Ave. North.

26676. Oct. 25.—Authorizing Alberta Public Works Department to make highway over Edmonton, Dunvegan & British Columbia Ry. in Kinoosayo Indian Reserve 150 E.

26677. Oct. 25.—Approving agreement between Bell Telephone Co. and Acorn Rural Telephone Association, Renfrew County, Ont.

26678. Oct. 25.—Approving clearances at Ontario Malleable Iron Co. siding, Oshawa, Ont.

26679. Oct. 25.—Authorizing Central Vermont Ry. to rehuild bridge 16, across Richelieu River, between Chambly and Richelieu, Que.

26680. Oct. 26.—Extending to Nov. 15 time within which Canadian Northern Ry. shall erect station building at Mikado, Sask., as required by order 25762, Dec. 27, 1916.

26681. Oct. 25.—Authorizing Noisy River Telephone Co. to erect wires across G.T.R. in Lot 9, Con. 6, Nottawasaga Tp., Ont.

26682. Oct. 25.—Approving clearance of proposed extension of Laplante siding to A. E. Alhert's potato shed at mileage 109 from Riviere du Loup, Que.

26683. Oct. 25.—Authorizing British Columbia Government to make highway over Grand Trunk Pacific Ry. at Ninth Ave., New Hazelton, B.C., at grade, maintenance of crossing to he paid hy G.T.P.R.; and rescinding order 16770, June 13, 1912, authorizing another crossing.

26684. Oct. 26.—Authorizing C.P.R. to change location of station at Marysville, B.C., on condition that siding be built there when necessary.

26685. Oct. 26.—Dismissing application of residents of Chatfield, Man., for order directing Canadian Northern Ry. to change location of siding.

26686. Oct. 26.—Amending order 26595, Oct. 2, re right of way fencing hy Edmonton, Dunvegan & British Columbia Ry.

26687. Oct. 27.—Ordering G.T.R. within 60 days to install automatic bell at first crossing west of Vara station, Ont., 20 per cent. of cost to be paid out of railway grade crossing fund; siding to be extended, and cars standing there to be kept back 150 ft. from crossing; all switching on siding to be flagged over crossing.

26688. Oct. 29.—Extending to Dec. 31, time within which Canadian Northern Ry. shall erect station at Birdview, Sask., as required by order 26348, July 20.

26689. Oct. 29.—Ordering Canadian Northern Ry. to fence its right of way in Lot 2, Con. 6, Glamorgan Tp., Ont.; work to be completed by Dec. 1, 1917.

26690. Oct. 29.—Authorizing C.P.R. to rebuild overhead bridge at King St., Brockville, Ont.

26691. Oct. 29.—Ordering Canadian Northern Ry. to appoint watchman at crossing of Marmora St., Trenton, Ont., until further order.

26692. Oct. 26.—Amending order 26339, July 18, 1917, re C.P.R. repairs at Benalta, Alta.

26693. Oct. 29.—Authorizing Alberta Public Works Department to make highway over Edmonton, Dunvegan & British Columbia Ry. in Sec. 7, Tp. 78, Range 4, west 6th meridian, Alta.; cost to be paid by Spirit River rural municipality No. 829.

26694. Oct. 29.—Ordering Niagara, St. Catharines & Toronto Ry. to install automatic electric block signals on curve between Winchester Ave. and Queenston St. bridge, St. Catharines, Ont.; the curves at Ball's Crossing and on trestle back of Front St. in Thorold, Ont., to be completed by Dec. 31.

26695. Oct. 29.—Authorizing C.P.R. to build spur for B. B. Rye Flour Mills, Ltd., Winnipeg.

26696. Oct. 30.—Suspending, until further order, part of Supplement 10, to Transcontinental Freight Bureau Tariff 25-C, C.R.C. 350, relating to perishable freight in heated cars from points in Oregon, Washington, Idaho and Montana to points in Western Canada.

26697. Oct. 31.—Approving Canadian Northern Ry. standard plans of 70 ft. through Howe truss, numbered 556-1; and 100 ft. deck Howe truss, dated Mar. 15.

26698. Oct. 31.—Authorizing Canadian Northern Ry. to build spur for Imperial Oil Co., North Battleford, Sask.

26699. Oct. 31.—Relieving Canadian Northern Ry. from providing further protection at highway near milepost 74, between Tilney and Baildon, Sask.

26700. Nov. 2.—Authorizing C.P.R. to build extension to spur for Randall, Gee & Mitchell, Calgary, Alta.

26701. Nov. 2.—Amending order 26574, Sept. 27, re subway under C.P.R. at Bowness, Alta.

26702. Nov. 2.—Authorizing Canadian Northern Ry. to build spur in Pas, Man., mileage 0 to 0.928, crossing Gordon Ave., lane in Block 26, Tenth St., and Halcrow Ave.

26703. Oct. 31.—Approving clearances of platform awning at American Can Co.'s plant in Montreal.

26704. Nov. 5.—Authorizing C.P.R. to remove rails of siding at Page, Man., and loading platform there; the shelter to remain and be treated as flag stop as in the past; and refusing application of ratepayers of Glenwood, Man., for order restraining C.P.R. from removing same.

26705. Nov. 5.—Authorizing Canadian Northern Ry. to build spur for Quaker Oats Co., Neepawa, Man.

26706. Nov. 5.—Authorizing C.P.R. to close, within limits of right of way, public roads between Secs. 13 and 14 and 14 and 15, Tp. 39, Range 7, w. 5 m., at mileage 58.8 and 59.9, C.P.R. Alberta Central Subdivision.

26707. Nov. 5.—Approving plan Feb. 26, showing changes and additions to interlocking plant installed at crossing of Michigan Central Rd. by London & Port Stanley Ry. at St. Thomas, Ont., and authorizing M.C.R. and L. & P. S. Ry. to operate trains over same without first stopping there.

26708. Nov. 5.—Authorizing C.P.R. to build two mining entries under Western Dominion Collieries spur and two mining entries under Manitoba & Saskatchewan Coal Co.'s spur, both on S.E. ¼ Sec. 19-2-6, w.2.M.

26709, 26710. Nov. 5.—Authorizing Hydro Elec. Power Commission of Ontario to build power development canal and construction railway under G.T.R. between Niagara Falls and Merritton and between Port Robinson and Suspension Bridge, Ont., subject to agreement of Aug. 4; and to divert railway temporarily, and also authorizing further canal and railway construction under Niagara, St. Catharines & Toronto Ry. in Lot 90, Stamford Tp., Ont., and to divert same temporarily.

26711. Nov. 5.—Authorizing G.T.R. to take certain lands to carry out order 25652, Nov. 20, 1916, by diverting its line through Campbellford, Ont., necessitated by building Trent Canal.

26712. Nov. 5.—Authorizing G.T.R. to take up siding to Canada Furniture Manufacturers, Ltd., Wiarton, Ont., and rescinding order 18022, Nov. 15, 1912.

26713. Nov. 5.—Authorizing Sudbury-Copper Cliff Suburban Electric Ry. to operate cars across C.P.R. bridge across Nelson St., Sudbury, Ont., as authorized by order 26639, Oct. 9.

26714. Nov. 6.—Authorizing C.P.R. to build spur for Jacques Perron, Campbell Tp., Que.

26715 to 26717. Nov. 5.—Approving Bell Telephone agreements with St. Maprice and Champlain Telephone Co., Sept. 13; Doe Lake Telephone Co., Oct. 16; and Brougham and Gratton Telephone Co., Oct. 24.

26718. Nov. 7.—Suspending until further order proposed cancellation by Great Northern Ry. of Supplement 9 to C.R.C. 1249, of basing arbitrary of 2½c per 100 lb. to be added to rates from Cloverdale, B.C., to make through rates on lumber commodities from Sidney, B.C., to destinations in Western Canada via New Westminster, Hope, Fernie, or Nelson.

26719. Nov. 7.—Ordering Kettle Valley Ry. to enlarge freight shed end of station building at Rock Creek, B.C., 12 ft. so freight shed room will be 14 x 20 ft.; work to be completed by June 1, 1918.

26720. Nov. 8.—Approving G.T.R. standard plan 3, showing combination station building for freight and passenger business at Burgessville, Ont.

26721. Nov. 7.—Authorizing Canadian Northern Quebec Ry. to build track at Garneau Jct., joining Montreal-Quebec line with branch to Riviere a Pierre, Que.

26722. Nov. 7.—Authorizing C.P.R. to build spur for Hydro Electric Power Commission of Ontario, in Toronto.

26723. Nov. 7.—Authorizing G.T.R. to build siding and spur for Palmolive Co. of Canada, Ltd., Toronto.

26724. Nov. 7.—Authorizing Canadian Northern Ry. to build across and divert highway through n.w. ¼ Sec. 16, Tp. 25, Range 25, west 4th meridian, Alta.

26725. Nov. 7.—Authorizing Grand Trunk Pacific Ry. to close crossing at mileage 109.4 in Hudson's Bay Reserve; and in lieu to build highway across railway in south ½ Sec. 24, Tp. 48, Range 26, west 2nd meridian, at mileage 109.3, Prince Albert Branch, Sask.

26726. Nov. 10.—Relieving G.T.R. from providing further protection at Long Crossing, 2½ miles west of St. Marys Jct., Dnt.

26727. Nov. 10.—Dismissing application of City of Hamilton, Ont., for order directing G.T.R. to restore passenger train service on its Northern & Northwestern Branch, between Hamilton, Burlington Beach and Burlington.

26728. Nov. 12.—Authorizing C.P.R. to build spur for Reliance Investment & Developing Co., Morden, Man.

26729. Nov. 12.—Relieving G.T.R. from providing further protection at Fourth Concession crossing, Ellice Tp., Ont.

26730. Nov. 12.—Authorizing Canadian Northern Ry. to remove agent at Mowat, Ont.

226731. Nov. 12.—Amending order 20846, Nov. 19, 1913, re express collection and delivery limits at Hamilton, Ont.

26732. Nov. 12.—Dismissing application of New Brunswick Potato Exchange, Ltd., for order requiring C.P.R. to furnish cars suitably equipped for carrying potatoes from New Brunswick to Ontario and Quebec; this order to be without prejudice to any application made to Board in event of improvements made not adequately taking care of the situation.

26733. Nov. 13.—Authorizing British Columbia Public Works Department to make highway over C.P.R. near Moyie.

26734. Nov. 12.—Amending order 24882, April 8th, 1916, re G.T.R. crossing protection at Coteau, Que.

26735. Nov. 13.—Extending, for two months from date, time within which C.P.R. shall complete spur for E. W. Gillett Co., Toronto, Ont.,

26736. Nov. 14.—Authorizing C.P.R. to build extensions to wharf in Kaministikwia River, Fort William, Ont.

26737. Nov. 13.—Relieving Edmonton, Dunvegan & British Columbia Ry. from fencing certain portions of line between mileage 0 and 130.8, until any land on either side or in vicinity becomes settled or improved.

26738. Nov. 8.—Dismissing complaint of Bell Telephone Co.'s North Lancaster exchange subscribers that company has not provided telephone service in Lancaster Tp., Ont.

26739. Nov. 14.—Ordering Canadian Northern Quebec Ry. to establish non-agency station at St. Alexis and stop local passenger or mixed trains on flag to pick up or debark passengers; order effective forthwith and rescinding order 25792, Dec. 29, 1916, in so far as it authorized closing of station.

26740 to 26742. Nov. 15.—Ordering Canadian Northern Quebec Ry. to install gates at Darling, Davidson, and Chambly Sts., Montreal, to be operated by day and night watchmen; 20% of cost to be paid out of railway grade crossing fund; 30% of maintenance and operation to be paid by City of Montreal.

26743. Nov. 14.—Ordering Canadian Northern Pacific Ry. to fence its line from mileage 56 to 59, Kamloops Subdivision, B.C., by Dec. 31.

26744. Nov. 14.—Authorizing C.P.R. to build extension to spur for T. Eaton Co., Saskatoon, Sask.

26745. Nov. 14.—Authorizing Local Improvement District 190, Okotoks, Alta., to make highway over C.P.R. MacLeod branch, on boundary line between Secs. 6 and 7.

26746. Nov. 16.—Authorizing C.P.R. to build for Western Elevator Co., Winnipeg, crossing over tracks at Asquith, Sask.

Gross Railway Earnings January 1 to October 31.

	1917	1916	1915
C. P. R.	$121,681,000	$110,855,000	$80,392,000
G. T. R.	55,152,459	52,700,341	41,568,485
C. N. R.	33,756,800	30,497,200	19,742,700
	$210,590,259	$194,052,541	$141,703,185

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from July 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Decrease
July	$3,344,900	$2,940,000	$ 904,900	$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,800	1,924,000	306,700
	$10,501,800	$8,667,800	$1,924,000	$1,078,000
Incr	.....	$ 962,800	.. ..	.....
Decr	$ 115,200	.....	$1,078,000	.....

Approximate earnings for October, $3,941,400, and for three weeks ended Nov. 21, $2,866,900, against $3,716,800 and $2,563,100 for same periods 1916.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1916, from Jan. 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
Jan.	10,158,307.86	7,726,829.36	2,431,478.50	341,070.27
Feb.	9,084'276.76	7,098,227.96	1,986,048.80	x308,293.94
Mar.	11,846,542.98	7,909,225.16	3,937,317.82	516,987.46
Apr.	12,355,519.60	8,180,541.98	4,174,979.62	441,241.66
May.	14,355,149 63	9,803,426.84	4,551,719.79	179,436.88
June	13,556,979.69	9,641,073.49	3,915,906.20	226,273.09
July	13,377,850.55	9,617,853.33	3,760,007.22	x257,084.51
Aug	12,414,537.25	8,596,998.76	3,817,538.49	x1,650,248.36
Sept	12,244,341.69	8,497,190.83	3,747,150.86	x1,382,608.30
	$109,313,516.01	$77,071,370.71	$32,322,145.30	x$1,894,225.76
Inc.	$ 8,729,726.45	$10,623,952.21	.....	.....
Dec.	.....	.....	$ 1,894,225.76	.....

x Decrease.

Approximate earnings for October, $14,593,000 and for three weeks ended Nov. 21, $10,344,000, against $13,102,000 and $9,071,000 for same periods 1916.

Grand Trunk Railway Earnings.

Aggregate traffic receipts from Jan. 1 to Oct. 31, 1917 and 1916.

	1917.	1916.	Increase.
G.T.R.	$43,396,555	$39,127,270	$4,269,285
G.T.W.R. . ..	8,004,931	7,781,671	223,260
D.G.H. & M.R.	2,788,094	2,761,787	26,307
Totals	$54,189,580	$49,670,728	$4,518,852

Approximate earnings for October, $5,844,525 and for three weeks ended Nov. 21, $3,859,407, against $5,660,321 and $3,731,151 for same periods 1916.

Grand Trunk Pacific Ry. Earnings.

The approximate earnings of the Prairie Section, 916 miles, for October, were $767,073 against $566,016 for Oct. 1916, and the aggregate earnings for four months ended Oct. 31, were $2,282,-447 against $1,622,621 for the same period 1916.

Double Tracking of C.P.R. between Leaside Junction and North Toronto.

The double tracking of the C. P. R. North Toronto Branch, between Leaside Jct. and North Toronto is well advanced, and every effort is being made to rush it to completion before severe weather sets in. The work consists of grading and grade reduction on two sides of the line, the laying of two miles of new second track, the extension of a number of concrete culverts, and the construction of two reinforced concrete trestles, one across the Toronto Belt Line Ry. ravine at mileage 0.9 from Leaside, and the other across the reservoir ravine, just east of Summerhill Ave., mileage 1.8 from Leaside.

The grading is completed, the new second track is laid over the greater part of the way, ballasting is in progress and the line will be ready for partial operation at an early date.

The new bridge which is being constructed over the Belt Line Ry. ravine is a double track structure, composed of five reinforced concrete towers of two bents each, supported on continuous concrete piers and carrying a total of 44 precast concrete track slabs in the deck, also 90 side walk slabs and 96 concrete handrail posts. This bridge is replacing a single track steel trestle, which has been cut apart and removed. During the construction of the new bridge, traffic is being carried over a temporary timber trestle. The concrete work on the new bridge is well advanced and, weather permitting, will be completed before the end of December. Seven of the ten piers are completed and excavating is in progress on the others. Excavating on the east abutment is also being carried forward. Forms are erected for two of the towers, and concreting is completed on one of them, and is in progress on the other, which is a little more than half completed. About a half a mile east of the bridge, ground was prepared on which the track slabs were cast. These slabs are completed and will be moved to the bridge site and erected in place on the completed towers. Forms for the sidewalk slabs and handrail posts are fabricated and assembled and the casting of them will be commenced at an early date.

The new bridge which is being constructed over the reservoir ravine at mileage 1.8 from Leaside, is a 3-track structure, with sidewalks along each side. The third track on this bridge will be used as a switching lead into North Toronto yard. This bridge like the one over the Toronto Belt Line Ry. ravine is composed of five reinforced concrete towers of two bends each, supported on continuous concrete piers, and carrying a total of 66 precast concrete track slabs in the deck, also 90 sidewalk slabs and 96 concrete handrail posts. This bridge also replaces a single track steel trestle, and during construction traffic is being carried over a temporary timber trestle. The old steel trestle has been cut apart and most of it has been removed. Nine of the 10 new concrete piers are now completed and the excavation for the last pier is completed ready to receive concrete. A large force of carpenters are rushing the form work on the towers, and forms are erected for two complete towers and partly erected for a third tower. The concreting of one tower is finished and is now in progress on the second tower, which is about 75% completed. The track slabs, sidewalk slabs and handrail posts are being cast on prepared ground, just east of the bridge site. Fifty four track slabs and 40 sidewalk slabs, as well as a number of handrail posts have been completed. The concreting of these units was expected to be completed by the end of November. The contractors on this bridge expect to complete concreting before the New Year.

The contract for the construction of the bridge over the Toronto Belt Line Ry. ravine is being carried out by the Dominion Construction Co., of Toronto, which also erected the temporary trestle at this point. The contractor for the construction of the bridge over the reservoir ravine is Wells & Gray, Ltd., Toronto. The two steel trestles were removed by James Finley, structural contractor, Tweed, Ont. The erection of the temporary trestle over the reservoir ravine was done by C.P.R. forces.

The whole work is being done under the direction of J. M. R. Fairbairn, Assistant Chief Engineer, Eastern Lines; the bridges having been designed by P. B. Motley, Engineer of Bridges. J. H. Barber is Engineer in Charge on the work.

Canadian Society of Civil Engineers

The Canadian Society of Civil Engineers' Council has unanimously approved of a suggestion by the committee on society affairs, to change the name to the Engineering Institute of Canada, and a ballot of the members is being taken on thhe proposal.

The following members have been nominated for officers for 1918: For President, H. H. Vaughan; for vice presidents, H. E. T. Haultain, R. F. Hayward, J. G. G. Kerry, C. H. McLeod.

For councillors: District 1, Montreal and District, C. H. Bristol, Ernest Brown, J. McD. Robertson, O. Lefebvre. District 2, Maritime Provinces, W. A. Duff, D. H. McDougall. District 3, Quebec Province, N. E. Brooks, Hon. G. R. Smith. District 4, Eastern Ontario, John Murphy, Alex. Gray. District 5, Western Ontario, L. M. Arkley, Peter Gillespie. District 6, Prairie Provinces, G. D. Mackie, L. A. Thornton. District 7, British Columbia, A. E. Foreman, E. G. Matheson.

Electric Power Development Plans in British Columbia.—Some of the details of the West Kootenay Power Co.'s power development plans in connection with the opening up of mines in the Copper Mountain district, near Princeton, B.C., have been announced. The power line will be about 100 miles long, with branches to Penticton and Princeton. In addition to supplying the mines to be opened up at Copper Mountain, and the prospect of those at Camp McKinney being reopened, the company will supply power to the Kettle Valley Ry. shops at Penticton. Surveys for the power line are reported to be in progress under F. M. Kerby. The project is expected to cost about $2,000,-000. L. A. Campbell is General Manager of the West Kootenay Power Co., and J. J. Warren, President K. V. R., is said to be interested in the project of the Canada Copper Corporation which is opening up the mines at Copper Mountains. This latter point is to be given an outlet to the railway by the building of a branch of the K. V. R.

Organization and Work of Canadian Railway Association for National Defence.

Canadian Railway and Marine World for November contained full particulars of the organization of the association above mentioned, and of the membership of some of its committees. Towards the end of October, offices were opened at 263 St. James St., Montreal, in charge of W. M. Neal, heretofore acting Superintendent of Car Service, C.P.R., as General Secretary, who has a staff drafted from the various railways, and including C. P. Riddell, for a number of years in the G.T.R. Transportation Department, and latterly in charge of the General Superintendent of Transportation's office on that line.

The association's main work, just now, is to recover from the United States a large number of Canadian owned cars, or an equivalent number of cars of other ownerships, and progress is being made in that direction. Urgent representations have been made to the American Railway Association at Washington, as to the necessity for arranging immediately a general movement of empty cars from the U.S. into Canada to offset the heavily preponderating southbound loaded movement which has existed for several months past, and cars are now being received from the U. S. roads at a number of points. These cars are being loaded at once, those of U. S. ownerships being used generally for handling of pulp, pulpwood, paper, hay and other commodities which are offering in large volume for U. S. destinations. The car supply as regards purely Canadian traffic is steadily improving, as a result of the policy of Canadian railways to devote Canadian owned cars preferably to the handling of goods between Canadian points.

All Canadian lines are now interchanging cars freely among themselves, not only in loaded movement, but in delivery of empty cars from one line to another, regardless of routing or earnings, for instance, it having been brought to the association's notice that the movement of potatoes from Maritime Province stations served by the Canadian Government Railways was being delayed on account of shortage of suitable cars, arrangements were immediately made with another line to deliver some of the latter's specially constructed potato cars to the first mentioned road and the cars are now being used locally on the Canadian Government Railways, the loaning road deriving no freight revenue whatever from the movement. The association is working closely with the Dominion Food Controller's Department, and further arrangements for expediting the transportation of the potato crop will be made as it becomes necessary. Similar car distribution arrangements have been made in Western Canada, with a view to augmenting the deliveries of wheat to the head of th elakes, in order that the demands of the allied governments for movement of grain overseas may be met. Numerous other arrangements have been made at local points, so that, through close co-operation of the various roads, the shipping public is getting better service.

The success that will attend the efforts which the railways themselves are making will depend to a very great extent upon the degree of co-operation extended by their patrons. The public can render assistance in many ways, principal among which are: Loading cars to full capacity in every possible instance; releasing equipment promptly after arrival at destination; refraining from ordering cars before they are actually needed, or ordering an unnecessarily large number of cars; and loading cars promptly after they are placed.

The existing waste of freight transportation facilities throughout the country is little realized by a large percentage of the shipping public. The principal factor in this waste is light loading. One Canadian road, owning a very large number of cars has an average car capacity of nearly 42 tons, but the average actual load per car is only 32 tons, and a great percentage of the traffic handled on this line is of such a nature as to permit cars to be loaded to full authorized carrying capacity. It is the association's purpose to reduce to the minimum the existing waste of car space, by pointing out to shippers and consignees the methods that may best be followed in loading various commodities to full capacity, and by keeping before them at all times the ways in which they can help the railways, and in so doing, help themselves. Bulletins on the subject of car loading are being prepared for issuance from time to time.

Meetings of passenger transportation committees, composed of operating and passenger traffic representatives of the railways in both Eastern and Western Canada have been held with a view to arranging generally a passenger train service that will fully meet the needs of the travelling public and at the same time permit of conservation of fuel and man power. It is anticipated that the result of the committees' deliberations will be of immense benefit, not only to the railways in discharging their duties to the public, by enabling them to cut off duplicate and unnecessary service, but to the country at large.

Canadian railways, co-operating with the public, have, since war was declared, effected a saving in passenger service equivalent to over 10,000,000 passenger train miles a year, and the work in which they are now engaged points to further reductions of about 2,250,000 passenger train miles a year. In undertaking their work the committee on passenger transportation feel that they will have the whole hearted sympathy and understanding of the travelling public, particulalry as the results of their work will have a very great bearing on the conservation of fuel, with the importance of which the association has been impressed by the Dominion Fuel Controller and other Government representatives.

Personnel of Association's Organization.

The following is the organization effected up to date:

Special Committee on War and National Defence.—Lord Shaghnessy, President, Canadian Pacific; Sir Wm. Mackenzie, President, Canadian Northern; H. G. Kelley, President, Grand Trunk; A. H. Smith, President, New York Central.

Administrative Committee.—U. E. Gillen, Vice President, Grand Trunk, chairman; C. A. Hayes, General Manager, Eastern Lines, Canadian Govt. Rlys.; D. B. Hanna, Third Vice President, Canadian Northern; F. F. Backus, General Manager, Toronto, Hamilton & Buffalo; E. D. Bornner, Vice President & General Manager, Michigan Central; J. H. Walsh, General Manager, Quebec Central; Sir George Bury, Vice President Canadian Pacific.

Western Sub-Committee of Administrative Committee.—F. P. Brady, General Manager, Western Lines, Canadian Govt. Rys.; W. P. Hinton, Vice President & General Manager, Grand Trunk Pacific; Grant Hall, Vice President & General Manager, Western Lines, Canadian Pacific; M. H. MacLeod, General Manager, Western Lines, Canadian Northern.

All sub-committees in the West report to the Western Sub-Committee of Administrative Committee at Winnipeg, which, in turn, reports to the Administrative Committee at Montreal.

Maritime Provinces Sub-Committee of Administrative Committee and Maritime Provinces Sub-Committee on Car Service. —W. R. Devenish, Superintendent, Canadian Govt. Rys.; J. Bain, General Superintendent, Halifax & Southwestern; H. C. Grout, General Superintendent, Canadian Pacific.

Ontario Sub-Committee of Administrative Committee and Ontario Sub-Committee on Car Service.—D. Crombie, General Superintendent, Canadian Northern; H. E. Whittenberger, General Superintendent, Grand Trunk: J. T. Arundel, General Superintendent, Canadian Pacific.

The Maritime Provinces and Ontario Sub-Committees report to the Administrative Committee in Montreal.

Commission on Car Service: A. Hatton, General Superintendent Car Service, Canadian Pacific, Chairman; W. N. Rippey, Superintendent Car Service, Canadian Govt. Rys.; J. E. Duval, General Superintendent Transportation, Grand Trunk; W. A. Kingsland, General Superintendent, Canadian Northern; W. S. Moy, Car Accountant, Quebec Central; W. A. Griffin, Supt. Traffic, Timiskaming & Northern Ontario; A. E. Locke, Supt. Car Service, Toronto, Hamilton & Buffalo.

Western Sub-Committee on Car Service.—J. P. Driscoll, Supt. Car Service, Canadian Northern; T. P. White, Car Service Agent, Grand Trunk Pacific; E. D. Cotterell, Supt. Car Service, Canadian Pacific; P. B. Robb, Car Service Agent, Canadian Govt. Rys.; C. E. Dafoe, General Freight Agent, Midland Ry.

The Commission on Car Service will assume duties of sub-committee for lines in Quebec Province.

Committee on Passenger Transportation, Eastern Lines. — C. S. Sims, Resident Vice President, Delaware & Hudson Railroad, Chairman; G. T. Bell, Passenger Traffic Manager, Grand Trunk; J. E. Duval, General Superintendent Transportation, Grand Trunk; H. T. Malcolmson, Superintendent, Toronto, Hamilton & Buffalo; G. C. Martin, Gen. Freight & Pass. Agent, Toronto, Hamilton & Buffalo; H. H. Melanson, Passenger Traffic Manager, Canadian Govt. Rys. A. C. Barker, Asst. to General Supt. Canadian Govt. Rys.; A. Price, Asst. General Manager, Canadian Pacific; C. B. Foster, Asst. Pass. Traffic Mgr., Canadian Pacific; J. Balkwill, Superintendent, Michigan Central; L. W. Landman, General Passenger Agent, Michigan Central; D. Crombie, General Superintendent, Canadian Northern; R. L. Fairbairn, General Passenger Agent, Canadian Northern; J. T. Reid, Superintendent, Quebec Central; E. O. Grundy, General Passenger Agent, Quebec Central.

Committee on Passenger Transportation, Western Lines.—H. H. Brewer, General Superintendent, Grand Trunk Pacific; A. E. Rosevear, General Freight Agt., Grand Trunk Pacific; A. E. Warren, Asst. to General Manager, Canadian Northern; R. Creelman, General Passenger Agent, Canadian Northern; F. P. Brady, General Manager, Canadian Govt. Rys.; W. E. Duperow, General Passenger Agent,

Grand Trunk Pacific; D. C. Coleman, Asst. General Manager, Canadian Pacific; G. A. Walton, General Passenger Agent, Canadian Pacific.

Committee on Tariffs and Statistics.—Guy Tombs, Asst. Freight Traffic Mgr. Canadian Northern; H. E. Macdonnell, Asst. Freight Traffic Mgr. Canadian Pacific; R. J. Foreman, Asst. to Vice President, Grand Trunk; D. A. Story, Freight Traffic Manager, Canadian Govt. Rys.; G. C. Martin, Gen. Freight & Passenger Agent, Toronto, Hamilton & Buffalo; H. Clark, Gen. Freight Agent, Ottawa and New York; N. J. Ferguson, Gen. Freight Agent, Quebec, Montreal & Southern.

A committee on materials and supplies will be organized later.

Administrative Committee's Proceedings.

At a meeting in Montreal, Nov. 2, the relations of the Association with the Board of Railway Commissioners for Canada and the American Railway Association were discussed. The Canadian Association for National Defence will deal with the other bodies mentioned as circumstances may require. The railways having membership in the Canadian Association will deal direct with the Board of Railway Commissioners and the American Railway Association as heretofore, communicating with the Canadian Association with the object of having that association get in touch with the other two bodies mentioned as may be deemed necessary.

Reports from individual railways operating in Canada to the Board of Railway Commissioners as required by the latter will be made as heretofore. As regards reports to American Railway Association's committees principally the Commission on Car Service of that body, the General Secretary after consultation with the Commission on Car Service of the Canadian Association will communicate with the Washington Commission on Car Service as to the feasibility and agreement of latter to having all railways operated in Canada supply the necessary statistics to the Canadian Association, which will compile into one series of reports for all Canadian lines the data presently required from such Canadian lines by the Washington Commission on Car Service and forward all such statements to the latter body. If this suggestion is agreed to by the Washington Commission on Car Service it will relieve the railways of making duplicate reports, namely, one set for the Washington Commission on Car Service and one set for the Commission on Car Service of the Canadian Association.

The Canadian Association to take up at once with the Car Service Commission of American Railway Association the matters of present large volume of hay shipments from Canada to United States, suggesting that arrangements be made whereby hay in machine compressed bales be given preference in ordering and car supply in view of the fact that twice as much machine compressed hay can be placed in a car as that done up in the ordinary hand pressed bales, and that there is urgent necessity for taking advantage of every opportunity of conserving car supply.

The Commission on Car Service was instructed to communicate immediately with the American Railway Association committees at Washington, as to obtaining equalization of freight interchange as between Canada and the United States, on basis of equipment owned. and the making of such arrangements as will ensure maintenance of equalization of such interchange.

As to the operating of excursion and other special trains, it was resolved that it is the sense of the association that special passenger trains be not run during the continuance of the war, except in case of extreme urgency.

It was resolved that sub-committees be appointed to handle matters affecting lines of railway in their respective territories—such sub-committees to report to the Administrative Committee, sub-committees in turn to appoint local committees as the former may consider necessary, which local committees shall report to the respective sub-committees. The personnel of the sub-committees appointed by the Commission on Car Service on Oct. 26 fill the Administrative Committee's requirements in this respect.

The Commission on Car Service will assume duties of sub-committee for lines operating in the Province of Quebec.

Committees to investigate the passenger service on railways in Canada to make recommendations for the elimination of unnecessary services, curtailment of services to meet actual needs of travelling public, are to be appointed at once and to be comprised of representatives of operating and passenger traffic departments of the lines principally interested. Each member of Administrative Committee is to forward to the General Secretary promptly names of representatives of his road to serve on such committees. It was suggested that a committee be appointed for lines operating east of Port Arthur and one for lines west of Port Arthur.

The Administrative Committee expressed its desire that the Commission on Car Service take in hand immediately the investigation of freight service on lines operating in Canada with a view to elimination of "fast" trains, handling of full train tonnage, handling of less than carload freight, bearing in mind the urgent necessity for conserving man power, motive power, and fuel, reports and recommendations to be made promptly to the Administrative Committee.

Commission on Car Service's Proceedings.

At a meeting on Nov. 3 in view of the heavy volume of overseas supplies now being handled and prospects of large increase in such tonnage to be handled during the ensuing winter season, it was considered necessary that the commission keep in close touch with the Director of Overseas Transport, or his representative, with a view to the making of arrangements whereby the maximum volume of supplies for the allies may be handled in the most efficient manner. The following resolution was adopted: "That request be made to the Director of Overseas Transport that he call upon this commission for any assistance that he may require in the transportation of overseas supplies and that he arrange for a representative of his department to attend meetings of this commission, of which he will be advised from time to time, with the object of effecting arrangements with a view to expediting movement of traffic, avoiding unnecessary accumulations and similar matters of interest to both bodies."

Having in mind the heavy deficiency in the supply of cars required for the movement of traffic in Canada, which is a direct result of the continued holding of Canadian owned cars in the car pool in effect in the United States and the growing loss of cars to such pool, the opinion of the commission is that pending return of a large number of cars from the U.S. to Canada and in order to avoid aggravation of present serious situation, the forwarding of Canadian owned cars to U.S. points should be discontinued. The following resolution was, therefore, adopted: "That Canadian owned box cars not to be loaded out of Canada beyond the tracks of the owner until the interchange is more equally balanced between Canada and the United States."

At a meeting of the Commission on Nov. 13 it was decided that before going further into the question of operation of freight trains and freight service generally, information be obtained as to present practices of various lines operating in Canada and the General Secretary was instructed to send circular letter to such lines asking them for complete report to be available for consideration at next meeting of commission, the principal points of enquiry to be as follows.

Are all freight trains, except live stock and perishable freight trains, required to handle tonnage equivalent to full haulage capacity of locomotive, if not, what reductions from 100% tonnage rating are allowed and in what circumstances?

What, if any, tonnage reduction allowed to trains handling live stock and how many cars of live stock required to be in train before such reduction permitted?

What, if any, stipulated speed for trains handling live stock?

What tonnage reduction, if any, allowed for trains handling perishables? How many cars of perishables per train required before such reduction permitted? What minimum speed stipulated, if any, for trains handling perishable freight?

What speed limit, if any in effect covering operation of dead or ordinary freight trains and what in the case of trains handling live stock or perishable freight?

What, if any, tonnage reduction, allowed way freight trains—1st, under agreement with trainmen or enginemen; 2nd, under other circumstances?

What is practice in regard to operation of "fast" or schedule freight trains? Are trains operated according to time table, regardless of tonnage? or is full tonnage insisted upon in every case, failing which, train set back or cancelled?

In handling of less than carload freight are sheds pulled daily for forwardance of cars on various routes, irrespective of amount of tonnage offering, or are lightly loaded cars set back to shed for completion of loading?

What figure is set as minimum weight of contents per car on l.c.l. freight before car allowed to go forward?

Are l.c.l. shipments accepted at sheds daily or only on certin days of week for various territories?

What is practice as regards picking up of less than carload shipments at way stations for movement to consolidation points? Is freight accepted and forwarded from way stations daily, or only on stipulated days of week? and is number of pickup cars for each subdivision or branch line regulated, or allowed to fluctuate according to daily conditions?

In order to provide for a uniform practice in the handling of requests for empty cars to be sent from United States to Canadian roads and thereby avoid possible confusion and misunderstanding, the following motion was passed: "That requests to the U. S. roads for empty cars be made by Canadian roads through the Canadian Railway Association for National Defence, instead of direct to the American Railway Association as in some cases heretofore, and that Canadian roads send to this association copies of their reports to the Washington Commission

on Car Service, giving particulars of empty cars received from U. S. lines and furtherance of such cars to connecting lines. All other empty cars received from American roads for return loading under other arrangements also to be reported to this association."

It is the desire of the Commission on Car Service that it be promptly advised of all arrangements made by or between Canadian roads for the general movement of empty cars from one line to another and the General Secretary was instructed to issue circular notice to all roads concerned accordingly.

The Commission on Car Service desires that in the case of complaints received by the association as to car shortage and similar matters and taken up with the roads concerned, such roads shall advise the association of the action taken by them in each case.

The Commission on Car Service requires that railways, members of this association, report to the association promptly any case of violation of instructions as outlined in circulars issued from time to time by the association, on matters coming within the jurisdiction of the commission.

It being thought probable that member lines not having officers included in the personnel of the Commission on Car Service would desire to personally present certain matters to the commission at its various meetings, the following motion was passed: "That general notice be sent to all members of the Canadian Railway Association for National Defence that at any time they wish to personally present matters to the attention of the Commission on Car Service, if they will so advise the General Secretary he will notify them of the next meeting of the commission, so that they may be present."

A suggestion was made that data be obtained from members of the association for the purpose of compiling information to be circulated amongst shippers and railways, as to standard loads, and that if such data be approved, the association communicate with railways, boards of trade, and similar organizations, with a view to insisting on such standards being observed wherever possible and thereby increase the available supply of cars very materially. The General Secretary requested to make the suggested enquiries forthwith and prepare the data as speedily as possible.

The question of loading cars to actual carrying capacity instead of stencilled capacity, or usual 10% in excess of stencilled capacity, was introduced by the chairman with the suggestion that Canadian lines undertake to adopt full capacity loading as the general practice in movement of traffic between Canadian points. After full discussion the following resolution was adopted: "That in the case of shipments between Canadian points, cars of 30 ton capacity, or under, will continue to be loaded when practicable to 10% in excess of stencilled capacity, that all cars of over 30 ton capacity to be loaded, when practicable, in accordance with their axle carrying capacity, and that in future when cars are restencilled, they shall be marked to show 'limit load' capacity instead of nominal capacity."

It was explained that under the proposed system the limit load for a 40 ton box car equipped with standard M.C.B. axles would be 132,000 lb., tare weight of car 38,000 lb., actual freight carrying capacity of car 94,000 lb., instead of 88,000 lb., as in present general practice.

The General Secretary was instructed to draft a form of circular to be issued by all roads operating in Canada containing instructions as to the above mentioned revised loading methods.

Committee on Passenger Transportation, Eastern Lines.

At a meeting on Nov. 13, C. S. Sims, Resident Vice President, Delaware and Hudson, was elected chairman.

After discussing the procedure to be followed by the Committee in discharging the duties assigned to it by the Administrative Committee, a working committee to analyze existing services in Eastern Canada, obtain suggestions and recommendations from the various railways and report thereon, was appointed as follows: H. H. Melanson, Passenger Traffic Manager, Canadian Govt. Rys.; R. L. Fairbairn, General Passenger Agent, Canadian Northern; Alfred Price, Assistant General Manager, Canadian Pacific; L. W. Landman, General Passenger Agent, Michigan Central; H. T. Malcolmson, General Superintendent, Toronto, Hamilton, and Buffalo; J. T. Reid, General Superintendent, Quebec Central; and J. E. Duval, General Superintendent Transportation, Grand Trunk.

In order to carry out the Administrative Committee's instructions to investigate the passenger service, and to make recommendations for elimination of unnecessary services and curtailment of services to meet the actual needs of the travelling public, the following subjects were suggested for consideration: Pooling competitive services and earnings. Increasing loading of sleeping cars and reduction in number of such cars per train, as practicable, railways to agree not to add extra sleepers to trains, until all berths in cars already allotted to train are sold. Elimination of club, observation and similar special cars. Reduction in speed of trains, especially local trains. Handling of express and delays to trains incident to heavy expres straffic.

The General Secretary was instructed to ask all railways in Eastern Canada to submit immediately suggestions and information on the following points:

Total average daily regular passenger train mileage operated under existing working timetable, and similar figures for service in effect at this time last year.

Total average daily mixed train mileage operated under existing working timetable and similar figures for service in effect at this time last year.

Recommendation as to reduction or elimination of special services, such as club cars, observation cars and all other such services as might be termed unnecessary, giving specific information as to trains in which such cars now operated, points between which run and car mileage that would be saved by dispensing with such unnecessary services.

Explain practice as regards the supplying of extra sleeping cars, i.e., what percentage of lower and upper berths in regular cars required to be sold before additional cars requested or furnished.

What changes can be made in the way of converting straight passenger service to mixed service, i.e., where local passenger trains and freight trains being operated on certain branch lines, it might be possible to consolidate both services into a mixed service without seriously inconveniencing the travelling public, or to run mixed service three days a week and straight passenger service on the alternate days. It is felt that the public can be brought to see the importance of conserving rail transportation facilities by the adoption of a win-the-war policy of eliminating unnecessary train service.

What, if any, passenger train reductions will be made effective Dec. 2. and what, if any, reductions effective Jan. 6, or on other than the dates mentioned? Reductions should be as great as possible, consistent with actual needs, so that the greatest degree of economy in fuel consumption and use of motive power and man power may be accomplished. Send list of proposed reductions showing points between which trains operated and mileage in each case, also class and frequency of service. If you cannot recommend reductions, give list of services on your line which might be dispensed with with least inconvenience, total of reductions recommended or suggested to be equal to at least 10% of present total average daily passenger and mixed train mileage.

The working committee met on Nov. 19, when statistics which had been prepared showing the existing passenger services and pointing to territories in which it appeared that reductions might be made without inconvenience to the public were read. After discussion of various competitive routes, such as Montreal-Quebec, Montreal-Ottawa, Montreal-Toronto, Ottawa-Toronto, etc., in which the two roads most interested are the Canadian Pacific and Grand Trunk, it was suggested by way of saving time, that those two lines jointly go over their respective services and prepare definite recommendations for presentation at next meeting. The replies of various member lines to the association's letter, calling for information, were placed before the meeting and the information embodied therein filed for further consideration and action.

In answer to enquiries as to reductions in service which will be made effective Dec. 2, 1917, and Jan. 6, the following replies were made: Effective, Dec. 2—nil; effective Jan. 6, as follows:

Canadian Pacific will reduce to about same basis as that of Jan. 1917.

Canadian Government Railways expect to make reductions similar to those effective Jan., 1917.

Grand Trunk will make approximately same reductions as were made in Jan., 1917.

Canadian Northern will make some reduction, but not in position to say definitely to what extent.

Toronto, Hamilton & Buffalo. No further reductions can be made.

Michigan Central. Reductions being made effective Nov. 25, equal to 8,640 passenger train miles a month. No further reductions contemplated at present.

St. Lawrence & Adirondack and Ottawa & New York do not anticipate making any further reduction, unless compelled to do so by shortage of fuel, owing to very serious inconvenience that would be caused public by interfering with present service.

Quebec, Montreal & Southern do not contemplate making any reduction, but mention the two trains which could be taken off causing least public inconvenience. If these two trains are taken off it would mean a reduction of 46% in the present passenger train mileage and a reduction of 28% in the total mileage of passenger and mixed trains, or 4,104 miles monthly—and would be a reduction of 53% as compared with Nov. 1916.

Maine Central. No further reduction recommended.

Algoma Central & Hudson Bay. Only one passenger train operated, no further reduction possible. This line has made

reduction of 60% in passenger service since 1913 and 84% reduction in mixed train service in same period.

Central Vermont. No further reduction can be made.

Quebec Central. Present conditions do not permit of any reduction being made, but if conditions change, will make such reductions as may be possible.

Western Sub-Committee on Car Service.

This sub-committee met in Winnipeg, Nov. 19, and elected J. P. Driscoll, Superintendent, Car Service, Canadian Northern, as chairman. The following local committees were recommended, subject to the sub-administrative committee's approval.

Committee 1, heeadquarters, Winnipeg, embracing territory from Port Arthur and Fort William to Manitoba's western boundary: R. C. Morgan, acting General Superintendent, Canadian Pacific; A. Wilcox, General Superintendent, Canadian Northern; H. H. Brewer, General Superintendent, Grand Trunk Pacific; W. A. Cowan, General Superintendent, Canadian Govt. Rys.; C. E. Dafoe, General Superintendent, Midland Railway; M. B. Murphy, Manager, Winnipeg Joint Terminals.

Committee 2, headquarters, Calgary, embracing Saskatchewan and Alberta; W. A. Brown, General Superintendent, Canadian Northern; J. M. Cameron, General Superintendent, Canadian Pacific; H. H. Brewer, General Superintendent, Grand Trunk Pacific.

Committee 3, headquarters, Vancouver, embracing British Columbia: D. R. Campbell, Assistant General Manager, Canadian Northern; W. A. Mather, Assistant General Superintendent, Canadian Pacific; H. McCall, General Superintendent, Grand Trunk Pacific.

It was decided to advise the local committees of their appointment, and in what matters they would report to the subcommittee, and that from time to time they will be advised of any special matters on which the sub-committee expects special investigation and report.

The question of the appointment of a secretary for the sub-committee was discussed as, no doubt, a large amount of statistics and correspondence will have to be handled; but the matter was left over for a future meeting.

It was decided that the sub-committee hold weekly meetings on Thursdays at 2.30 p.m.

Canada's Splendid Railway Service.

A statement issued from the Association's office, Nov. 22, says: "Certainly no reduction in freight and passenger rates are being looked for as the result of railway economies now being effected by the Canadian Railway Association for National Defence. Canada is today getting the best and cheapest railway service in the western world. In spite of the car shortage created by the abnormal balance south bound over north bound traffic, in spite of war requirements, higher labor charges, the necessity of importing coal for locomotives, and the low efficiency of the coal due to lower winter temperatures in Canada, there is a greater degree of efficiency reached in the operation of Canadian railways than anywhere else in the new world. Car shortage is being reduced day by day. The percentage of freight cars out of service for repairs in Canada is lower than the percentage on U.S. roads and the average cost to the Canadian traveller or shipper is less.

"For the year ended June 30, 1916, the charge for moving an average ton of freight one mile in the United States was 0.716 of a cent. In Canada it was 0.653 of a cent. In the U. S. the average passenger mile cost the passenger 2.006c. In Canada it cost him 1.954c. At the same time the Canadian railways were hauling their coal from foreign mines and paying duty on it. They were getting less work from the same coal because of the lower winter temperatures in Canada. They paid more for labor and yet charged the public less for their services than any of the other roads on this continent."

In connection with the statement made at Washington that the U. S. railways have curtailed passenger service by over 20,000,000 passenger train miles per annum, the Canadian railways point to a reduction of over 10,000,000 passenger miles per annum in Canada, which, in view of the lower total mileage in the Dominion as compared to the U. S. is a vastly greater pro rata reduction.

Railway Finance, Meetings, Etc.

Atlantic, Quebec and Western Ry.—A supplemental mortgage dated June 30 has been filed with the Secretary of State, modifying the first mortgage trust deeds of June 26, 1905 and July 3, 1906. There are $2,548,675 of the 1st mortgage debentures outstanding, covering the road in operation from Paspebiac, on the old Atlantic and Lake Superior Ry., to Gaspe, Que., 102¾ miles. Under the agreement adoptde by the bondholders, interest payments will only be made in so far as they are earned.

Canadian Northern Ry.—An extension agreement dated Aug. 17, between the Canadian Northern Ry., the Mount Royal Tunnel and Terminal Co., the Canadian Northern Ontario Ry., the Canadian Northern Quebec Ry., and the Central Trust Co. of New York, as trustee and holders of the one year 5% secured gold notes of the C. N. R., issued under a trust agreement of Sept. 1, 1916, has been deposited with the Secretary of State, at Ottawa.

There has been deposited with the Secretary of State at Ottawa duplicate of an extension agreement dated Oct. 31, between the C.N.R. Co. and the Central Trust Co. of New York, as trustee and holders of one year 5% gold bonds issued under an agreement of Sept. 1, 1916.

Canadian Pacific Ry.—The directors have declared a dividend for the quarter ended Sept. 30, of 2½% on the common stock, being at the rate of 7% per annum from revenue and 3% per annum from special income account, payable Dec. 31 to shareholders of record Dec. 1.

Grand Trunk Ry.—An agreement of conditional sale, made between Blair and Co., and the G.T.R., and the Equitable Trust Co. of New York. respecting Series D equipment bonds, has been filed with the Secretary of State at Ottawa.

The Grand Trunk Ry. paid off its $4,000,000 two year notes at 5%, Nov. 1, through Blair & Co., New York.

Grand Trunk Pacific Ry.—There has been deposited with the Secretary of State at Ottawa a mortgage agreement dated Oct. 18, between the company and the Crown, represented by the Minister of Finance, securing a loan to the company not exceeding $7,500,000. This is the loan authorized by the Dominion Parliament at its recent session.

Guelph Junction Ry.—A dividend at the rate of 7½% for the quarter ended Sept. 30, was declared at a meeting of directors in Guelph, Ont., Nov. 23. This dividend will bring up the total received by the City Council, which owns nearly all the stock, for the year to $43,350.

Ottawa and New York Ry.—There has been deposited with the Secretary of State at Ottawa, a discharge of mortgage dated April 1, 1899, made between the O. and N. Y. Ry., and the State Trust Co. of New York, for the purpose of securing $500,000 bridge sec. 1, mortgage 4% gold bonds of the company.

Ottawa Terminals Ry.—The board of directors for the current year, elected at the recent annual meeting, is as follows: H. G. Kelley, President; U. E. Gillen, Vice President; Frank Scott, Secretary and Treasurer; W. H. Biggar, K.C., J. E. Dalrymple, H. R. Safford and R. S. Logan.

Temiscouata Ry. — The bondholders' committee in London, Eng., has been advised that owing to the decreased revenue during the past year, there is not sufficient net revenue to pay a dividend on the consolidated mortgage income bonds, and that the balance, after paying the prior lien bond interest and redemption fund, is being applied to strengthen the company's resources. Consequently, no dividend will be paid this year on the provisional certificates issued by the committee. For the previous year, 1% was paid on the certificates.

Timiskaming and Northern Ontario Ry.—Passenger earnings for September, $65,253.67; freight earnings, $122,299.62; total earnings, $187,553.29 against $66,762.03 passenger earnings; $95,895.19 freight earnings; $162,657.22 total earnings for Sept. 1916.

Appeal to G.T.R. Employes in United States.—H. G. Kelley, President, G.T.R., has issued the following circular to employes in the U.S.: In the interest of conserving the foodstuffs of the country by the elimination of waste, it is urgently requested that employes of the carriers engaged in the transportation of foodstuffs, exercise such care and diligence as will minimize the damageto this class of freight when in carrier's custody for transportation and lessen the economic loss. I appeal to all Grand Trunk employes, particularly those engaged in station, yard and train service, as a patriotic duty to the nation, to exercise such precaution in providing proper refrigeration, ventilation, protection from the weather, and care in loading, switch and train handling of carload and less than carload shipments of food products, as will eliminate waste. Observe the slogan "Efficient, maximum service," and in so doing you will render an enduring service to your country. The Nation is counting on you."

Coupler Repairs.—In a paragrauh on this subject in Canadian Railway and Marine World for November, page 432, it was stated, in referenceto an investigation undertaken recently by one of the larger railways in the U.S., that the expense of coupler repairs for 1916 was $197 a car. The amount per car should have been given as $1.97.

Winnipeg jitneymen whose licenses have been suspended for non-compliance with the bonding bylaw have made application to the city council's licensing committee for a refund of the license fee proportioned to the period of suspension. A report as to the number of licenses affected, with the amount involved, is being prepared for the committee's consideration.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta and Great Waterways Ry.—Track is reported to have been laid to beyond mileage 274, about 18 miles from McMurray, Alta. A contractors' freight and passenger train service was put in operation from Lac la Biche, the terminating point of the permanent train service, Oct. 27. It is expected to have track laid to McMurray by the end of the year.

J. D. McArthur, President, is reported to have said in Winnipeg, Nov. 18, that steel had been laid to McMurray, on the Athabasca River, that the line would be finished up and a full train service put in operation next year, and that it is expected to arrange for a regular steam boat service from McMurray to the Arctic Ocean when financial conditions become easier.

The line starts from the Edmonton, Dunvegan and British Columbia Ry. at Carbondale, 143 miles from Edmonton, and runs northerly and easterly to McMurray, 290 miles. Track was laid to mileage 174.5 at the end of 1915, and was resumed in Dec. 1916, it being estimated that 40 miles additional had been laid to the end of that year. The point to which traffic is now being operated is on the river, and connection with McMurray is made by means of scows. (July, pg. 273.)

Alma and Jonquiere Ry.—The Quebec Legislature is being asked to extend the time within which the company may build its projected railway from LaBarre or St. Gedeon, on the Quebec and Lake St. John Ry., to Little Discharge, to Alma Island, and through Signai, La Barre, Kenogami and Jonquiere Tps. to Jonquiere station on the Q. and St. J. Ry. The company was incorporated originally in 1913, and in 1915 secured an extension of time to build its line. (Sept., 1915, pg. 351.)

Burrard Inlet Tunnel and Bridge Co.—With only one dissentient, and one representative not voting, it was decided at a meeting of shareholders held Oct. 25, to apply to the Dominion Parliament for a renewal of the company's charter. The company, which consists of the municipalities surrounding Burrard Inlet, Vancouver, has power to build a bridge across the Second Narrows of Burrard Inlet, and a tunnel in the same vicinity, with railway lines to connect with all railways in Vancouver. The company's charter powers expire in Feb. 1918. The shareholders felt that while there was very little prospect that the company would ever build the bridge, it possessed valuable assets in the shape of data collected by engineers, and plans, which would be entirely lost if the company went into voluntary liquidation. (Nov. pg. 433.)

Canadian Northern Ry.—A press report dated Nov. 12 stated that the track laid beyond Sanguedo, Alta., on the line heading from Peace River, was being finished up and got ready for traffic.

Application has been made to Vancouver City Council for a permit for the erection of train sheds at the False Creek station, now nearing completion. The estimated cost of the train sheds is $170,000.

In connection with the False Creek reclamation works at Vancouver, the Supreme Court of Canada has given judgment in favor of Champion and White, in their suit against the city. The firm owns 300 ft. of water frontage on False Creek, and claimed that the construction of the sea wall by the C.N.R. under the agreement with the corporation, would materially injure their property. The trial judge decided in favor of the plaintiffs, the B.C. Court of Appeal reversed the decision, and the original decision has now been affirmed by three out of five judges of the Supreme Court. It is expected that the case will be taken to the Imperial Privy Council. These proceedings are delaying the progress of the reclamation works.

The British Columbia Minister of Railways has sent a lengthened communication to the Dominion Government with regard to the obligations entered into between the B.C. Government and the Canadian Northern Pacific Ry., pointing out that the province must look to the Dominion Government to carry out the company's contractual obligations now that the company's affairs are being taken over. The letter concludes: "The province claims for a restoration to the trust funds of the amounts improperly paid over to the company for specific performance over the company's various undertakings and for a specific release in respect of its guarantee of the company's bonds.

We are officially advised that no arrangements have been entered into with regard to the building of a union station at Victoria, B.C., by the Canadian Northern Ry. and the Esquimalt & Nanaimo Ry. It is not likely that there will be any move made in regard to a new passenger station for Victoria until after the war. (Nov., pg. 433.)

Canadian Pacific Ry.—We are officially advised that the company has no present intention of building a new station at Lethbridge, Alta., as stated in a recent press report.

We are officially advised that neither the C. P. R. nor its subsidiary the Esquimalt & Nanaimo Ry., has in contemplation the building of a dock at Victoria, B.C., in connection with the Songhees Indian Reserve development plans, as stated in a recent press report. All the harbor development work at present in progress at Victoria is being carried on by the Dominion Public Works Department. (Nov., pg. 433.)

Cavalier County Ry.—A recent decision of the Board of Railway Commissioners granted the Cavalier County Ry. permission to construct a siding at Windygates, Man., the company to pay the costs. The Cavalier County Ry., we are advised, is a United States corporation, having its office at Langdon, N.D., and the following officers: President, G. Grimson; Secretary, R. Robertson, Stillwell, N.D.

Windygates is the terminus of the extension of the C.P.R. Snowflake branch, and is situated at the International Boundary between Manitoba and North Dakota. There are two branch lines in Cavalier County extending toward the boundary, one a Great Northern Ry. line, extends across the boundary to Morden, the title of the Manitoba end of the line being the Midland Ry. of Manitoba, and the second, a Northern Pacific branch, points rather more westerly than Windygates.

Central Canada Ry.—During the recent summer four piers of the substructure of the bridge across the Peace River have been completed, and three more are yet to be finished. These three piers are in deep water, work on them was started last winter and will be completed during the coming winter. All the other substructure work and the approaches have been completed. The east approach to the bridge is 700 ft. long, running to 50 ft. high. This took 250,000 cubic yards of material for the fill, all of which was moved this year. Provision is made on both approaches for a 20 ft. highway in addition to the railway tracks. J. E. Young, of the Canadian Bridge Co., is reported to have arrived at the bridge site for the purpose of arranging for the erection of the superstructure which it is expected to have in position by the fall of 1918. (June, pg. 224.)

Dolly Varden Mines Ry.—The railway which the British Columbia Legislature has authorized the company to build will extend from the company's wharf at Arctic Arm to the Dolly Varden and Wolf claims in the Kitgault Valley of Northern British Columbia. A considerable amount of construction work is reported to have been done during the present season by R. B. McGinnis, Superintendent for the company, who was in Victoria, B.C., Nov. 14. He stated that work would be suspended before the end of December but would be resumed in April, and would be completed by the end of 1918. (June, pg. 224.)

Edmonton, Dunvegan & British Columbia Ry.—The Edmonton, Alta., City Council on Nov. 7, adopted the following report from a special committee which had under consideration the company's application respecting its entrance into the centre of the city: "That the E. D. & B. C. R. be granted the right to use 30 ft. of 121st St. adjoining the existing G.T.P. right of way, but with respect to Mackenzie Ave. (104th Avenue) the committee is of the opinion that the portion of the street not granted to the G.T.P.R. is too narrow to warrant any grant of that avenue. It is, however, recommended that until the G.T.P. is ready to use the north 40 ft. of Mockenzie Ave. the E. D. & B.C. Ry. be granted a license to use 15 ft. thereof." (Nov. pg. 433.)

Grand Trunk Pacific Ry.—The question of the completion of the company's hotel at Regina, Sask., was discussed at the meeting of the city council, Nov. 5. A deputation from the council subsequently waited upon one of the company's officers at Winnipeg, and the council was advised Nov. 15, that the company's architects had been instructed to prepare estimates for the completion of part of the building during 1918.

The projected spur line from the company's railway to the market place in Calgary, will not be built this year, according to a letter received by Commissioner Graves, Nov. 4. It is expected, however, that the council will consent to the postponement of construction until the spring.

Traffic on the G.T.P.R. main line was suspended for a couple of days by a land slide near Kwinitsa, 54 miles east of Prince Rupert, B.C., on Nov. 1. The line was buried 35 ft. deep with debris for a distance of over 100 yards. (Nov., pg. 433.)

The Grand Trunk Ry. is being asked to remove its siding on Bathurst St., London, Ont., between Waterloo and Wellington Sts., on the ground that it interferes with the operation of the London & Port Stanley Ry.

We are officially advised that the company has installed the absolute permisiss block signalling system on its single track line between Shelburne, N.H., and Bethel, Me., 16 miles. The installation was done by the company's own forces, the material

being purchased from the General Railway Signal Co., Rochester, N.Y. The signals are bottom post, d.c. low voltage type 2A.

In connection with an application to the Windsor, Ont., City Council for the granting of patents for water lots at the foot of Brock St., provided that the property is used for a competitive ferry line, Alderman Howell explained that a number of people represented by C. Miller, barrister, Toronto, were working in conjunction with the G.T.R., with a view to erecting an hotel, and a new station with covered tracks on the land between Brock and Goyeau Sts., and that, in connection with the station and hotel, it was proposed to operate a ferry service from Brock St. to Brush St., Detroit, Mich., at which point the G.T.R. has a slip dock and a station. A motion to postpone action until plans of the proposed project were submitted resulted in a tie, six aldermen voting each way. The mayor gave a casting vote in favor of the postponement, stating that the promoters would not be deterred thereby. O. E. Fleming, K.C., Windsor, is said to be looking after the matter for the promoters. (Nov., pg. 433.)

Hydro Electric Power Commission of Ontario.—The Board of Railway Commissioners has ordered the G.T.R., the Michigan Central Rd., and the Niagara, St. Catharines and Toronto Ry. to execute their agreements with the commission, which have to do with the building of a power development canal and construction railway, crossing the railways named.

Intercolonial Ry.—Tenders are under consideration for the erection of an extension to the freight sheds at Halifax, N.S. (Nov. pg. 433.)

The Kettle Valley Ry. is making surveys for railway from Princeton South to Copper Mountain, approximately 14 miles, to reach a copper mine being developed by the Canada Copper Coropration, Ltd. The track will leave the main line in Princeton yard, cross the Similkameen River to the east side, and follow fairly close to the river, almost due south all the way. In addition to 14 miles of main track, there will be, probably, 2 miles of sidings and loading tracks at the mine and at the proposed concentrator. The main working tunnel at the mine is about 1,100 ft. higher than Princeton yard. The maximum gradients will be 2.2% from Princeton to the mine with all down grade in the other direction, or with the heavy traffic. The maximum curvature will be 14 degrees, or 410 ft. radius. It is the intention to build a standard gauge line on which heavy traffic may be handled, using 80-lb. and 85-lb. rails, good ties, and K.V.R. standard bridges and trestles. The location is not completed, but surveys so far show heavy work. For 4 miles on the south end, the material to be moved is nearly all solid rock; for the balance the material is mixed—soild rock, loose rock, hardpan, etc. Approximate estimates show the material to be moved in grading as 720,000 cubic yards, 40% of which will be solid rock. Tunnels in solid rock, 1,200 lin. ft. Timber in trestles, 2,000,000 ft. b.m. A bridge across the Similkameen River 250 ft. long, kind of bridge not yet decided upon. It is the intention to ask for tenders for the grading early in December, to get part of the work done during the winter, and have the line completed in about a year. A. McCulloch, Chief Engineer K. V. R., is in charge of surveys and will have charge of construction.

Pere Marquette Ry.—The President of the P. M. R., accompanied by a number of the company's officers, visited Sarnia, Ont., recently and inspected the company's property there. A deputation from the Sarnia City Council saw the officers in connection with the erection of the projected new railway station. (Sept., pg. 351.)

National Transcontinental Ry. — A press report states that negotiations are in progress between the Railways Department and the Quebec Ry., Light & Power Co., for the electrification of the government railway between Sillery Cove, and the terminal station at Champlain market, Quebec. (Oct., pg. 393.)

Quebec and Saguenay Ry.—A press report states that the completion of the line as far as Baie St. Paul, Que., was expected to be completed by Dec. 1, and that the rest of the line to Murray Bay will be ready for operation by next summer. (Nov., pg. 394.)

Northern New Brunswick and Seaboard Ry.—We are officially advised that while negatiations have taken place between the New Brunswick Government and the St. John and Quebec Ry. in connection with the act providing for the taking up of the rails on the N. N. B. and S. Ry. and relaying them on the St. J. and Q. Ry., it was decided not to remove the rails, and it is said that the St. J. and Q. Ry. will be able to obtain the rails required from another source. (Nov. pg. 433.)

Quebec and Atlantic Ry.—The Quebec Legislature is being asked to incorporate a company with this title to build a railway from Quebec City to Chicontimi, thence to the provincial boundary near Cape St. Charles on the Labrador coast, with branch lines northerly and southerly from the main line, and to make connection in the City of Quebec with the National Transcontinental Ry. L. Cannon, Quebec, is solicitor for the applicants.

Standard Chemical, Iron and Lumber Co.—We are officially advised that this company is building a logging railway in connection with its factory at South River, Ont., to get out cordwood. The line is standard gauge, and is to be laid with 56 lb. steel rails. It is expected to complete seven miles of the line, with about a mile of sidings by the end of this year. The contractors are Chambers, McQuigge and McCaffrey. This line will be extended from time to time as the company's lumbering operations render it necessary. The company has bought a 50-ton climax geared locomotive and sixteen 34 ft. flat cars.

The company proposes to build a logging railway in connection with its plant at Donald, Haliburton County, during 1918.

St. John and Quebec Ry.—We are officially advised that track has been laid from Gagetown to Queenstown, N.B., 8.5 miles, on the Gagetown-Westfield extension, and that it is expected to have the remaining 29.3 miles of the extension completed in 1918. The Nova Scotia Construction Co., Sydney, N.S., has the contract. C. O. Foss, Fredericton, N.B., is Chief Engineer. (Nov., pg. 434.)

Timiskaming & Northern Ontario Ry.—We are officially advised that work is in progress on the revision of the line between mileage 63 and 66.5. This is a part of the line built to the original plans and specifications, and the revision is being made to bring the portion of the line up to the standard finally adopted. The revision is 35 miles long and will reduce the distance 866 ft.; North bound gradients from 1% to 0.4% and southbound from 1% to level, number of curves 6, and maximum curvature from 7° to 3° and the total curvature by 309° 15′. The work is being done by the Port Arthur Construction Co., Toronto. (June, pg. 225.)

Toronto, Hamilton & Buffalo Ry.—We are officially advised that the plans for new yards at Bracebridge, Ont., which have been somewhat modified from those originally made, have not yet been filed with the Board of Railway Commissioners. Arrangements have been made, however, with the municipal authorities interested for the diversion of roads, building of railways, etc. The plans involve the diversion of the Michigan Central Rd.'s Niagara branch, the rearrangement of the Canadian Niagara Power Co. power line spans and the diversion of gas mains and telephone lines.

The question of the extension of the company's tracks at Kinnear yard in the southeastern part of Hamilton, came before the Board of Railway Commissioners, Oct. 22, and on subsequent days. One of the company's arguments in support of its plans was that it is going to spend $600,000 upon the improvement of its yards at Bridgeburg, and that the extension of the Kinnear yards, by the acquisition of part of the park property, is essential for car working to make possible a 10-hour freight movement to Toronto.

Application is being made to the Board of Railway Commissioners for permission to build three spur lines crossing New York St., Brantford, Ont. (Nov. pg., 434.)

Toronto Terminals Ry. Co.—The progress made during the summer with the new union station at Toronto is such that it is expected that the whole of the outside work on the main building will be completed by the end of the year. Owing to difficulties of getting stone and other materials, partly due to the state of traffic on the railways, the delivery of material has not been as free as it might have been. As a consequence the progress on the interior work has not been what was expected. The offices and the platforms are not expected to be completed for another year. (Jan., pg. 19.)

War Features in Victory Loan Parade.—The principal features in the Victory Loan parade at Montreal, Nov. 19, were a British tank, and a section of a captured German submarine. These two exhibits were used previously through the courtesy of the British Government, in connection with the Liberty Loan campaign in New York City. The tank was taken to Montreal at the expense of Lord Shaughnessy, and the cost of carrying the submarine to Montreal was borne by Jas. Carruthers, President, Canada Steamship Lines. The submarine reached Montreal, via St. John, N.B., Nov. 16, and the work of transferring it from the waterfront to Victoria Square, where it was an exhibition, was looked after by J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, and by the staff of Canadian Vickers, Ltd. The tank was subsequently conveyed to Toronto and was on exhibition in the Victory Loan parade on Nov. 21.

The Canadian Tie and Lumber Co., Ltd. has been incorporated under the Dominion Companies Act, with $150,000 authorized capital and office at Toronto, to carry on a general tie and timber business, and to carry into effect an agreement between J. H. Durham, Louisville, Ky., and S. F. McCandless, Toronto, in connection with a contract made with the G.T.R.

Canadian Transportation Men, Engineers Etc., in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We should be glad to be favored in this respect.

1st Battalion, Canadian Railway Troops.—Several weeks ago, the Commander in Chief, Sir Douglas Haig, called at this battalion's headquarters in Belgium, and as the officer commanding, Lt. Col. Blair Ripley, formerly Engineer of Track Elevation, C.P.R., North Toronto, was absent, Sir Douglas wrote him a letter of appreciation of the work the battalion had done since reaching the front.

Canadian Railway Troops and Engineers.—The Militia Department at Ottawa gave out, on Nov. 1, the composition of the Canadian Expeditionary Force in Belgium and France, including among others the following: Railway troops, 10 battalions; engineers, field companies, 12; base company, 1; army troops companies, 4; tunneling companies, 3; railway operating companies, broad gauge, 1; narrow gauge, 1; railway construction corps, 1; construction company, 1.

The New Brunswick Power Co. which owns and operates the St. John Ry., St. John, N.B., has sent the usual Christmas box to each of its employes at the front, together with a personal letter from the President, L. R. Ross. This is the third year this has been done, the number supplied having been originally 62, but owing to casualties, the number this year is only 33.

Railway Work in the British Offensive.—The official report on the recent operations in the Cambrai district of France says: "Much credit is due to the transportation service for the rapidity with which the concentration for the operations of the last few days was effected. Roads and railways, both broad gauge and light, have been developed, and, since the advance, have been extended in a manner which has contributed largely to the success of our preparations and subsequent operations."

The Timiskaming and Northern Ontario Railwaymen's Patriotic Association, up to July 31, contributed $15,223.67 to the Red Cross and $18,216.26 to the Canadian Patriotic Association. In addition to these amounts, $13,660.91 has been donated to enlisted employes direct, and the T. & N. O. R. Commission has subscribed $5,000 and $10,000 to the Red Cross and Patriotic Associations respectively.

PERSONAL NOTES.

Lieut. J. M. Blake, Devon Regiment, killed in action in France, Oct. 4, was a grandson of Hon. John Ross, at one time Attorney General for Upper Canada, and from 1852 to 1862, one of the directors and the first President of the G.T.R.

Lieut. L. H. Biggar, son of W. H. Biggar, K.C., Vice President and General Counsel, Grand Trunk & Grand Trunk Pacific Railways, Montreal, was reported early in November as having been wounded. We were advised on Nov. 14 that he was not seriously injured, but was suffering from concussion, due presumably to a shell having exploded very near him. He cabled that he hoped to be all right again very soon. He is in the 42nd Battalion, one of those sent over by the 5th Royal Highlanders of Montreal. He left Canada in Oct. 1916 and has been in France since April 1 last.

Major G. A. E. Bury, son of Sir George Bury, Vice President, Canadian Pacific Ry., arrived in Montreal, Oct. 28, on two months sick leave. He went overseas with the 26th Battalion as Captain and after being promoted to Major, was appointed Deputy Assistant Quartermaster General of the Canadian Training Division.

F. T. Caldwell, Division Superintendent of Telegraphs, Grand Trunk Pacific Ry. & G.T.P. Telegraph Co. (lines in Ontario, Manitoba and Saskatchewan) and Superintendent of Time Service, G.T.P.R., Winnipeg, has been granted extended leave of absence, consequent on entering military service with the U.S. Army Signal Corps, as Lieutenant.

Lieut. J. H. Cardew, M.C., who died of wounds in October, was educated at McGill University, Montreal, and held the degree of M.Sc. of the University. He was for some time Electrical Engineer of the Indian State Railways.

Lt. Col. E. E. Clarke, Assistant Director of Transport & Supplies at Militia Headquarters, Ottawa, is reported to have been appointed Director General of Supplies and Transportation, to succeed Brig. Gen. J. L. Biggar, who has been appointed acting Quartermaster General.

Lt. Col. J. J. Creelman, son of the late A. R. Creelman, General Counsel, C.P.R., has retired from his candidature to represent Montreal's St. Antoine Division in the House of Commons, and announces that he is ready to return to the front.

A son of H. J. Cowie, European Agent, Canada Steamship Lines, Liverpool, Eng., has been promoted to Captain and given the Military Cross for services performed at Lens on Aug. 14.

Provisional Lt. Col. J. S. Dennis, Calgary Battalian, Reserve Militia, Chief Commissioner of Colonization and Development, C.P.R., Montreal, has been granted from Sept. 20 temporary rank of Colonel in the Canadian Militia, while performing the duties of Officer Commanding the Western Division, British Canadian Recruiting Mission in the United States.

James Duff, formerly Superintendent of Townsites, Natural Resources Department, C.P.R., Calgary, who went overseas as Captain in the 239th Battalion, has been promoted to Major.

Major Kenneth Lock Duggan, B.Sc., who was reported killed inaction recently, was a son of G. H. Duggan, M.Can.Soc. C.E., of the Dominion Bridge Co. He graduated in mechanical engineering from McGill University in 1914, and during summer vacations had been engaged in 1911 on irrigation works for C.P.R. Natural Resources Department in the neighborhood of Calgary, Alta.; in 1912 with Abitibi Pulp & Paper Co., and in 1913, in the Dominion Bridge Co.'s drafting office. At the time of enlisting, he was on the Monteral Harbor Commission's engineering staff. He went overseas with the 5th Mounted Rifles, C.E.F., was appointed a major in 1916, and was mentioned several times in Field Marshal Sir Douglas Haig's dispatches. His only brother was killed at Loos, about two years ago.

Lieut. S. M. Goodeve, of the Royal Flying Corps, son of A. S. Goodeve, one of the Board of Railway Commissioners at Ottawa, was killed in action during the recent allied drive on Cambrai. Another son, Lieut. Arthur Goodeve, was killed near Courcelette in September, 1917.

Lieut. C. S. Hall, of Montreal, nephew of Grant Hall, Vice President & General Manager, Western Lines. C.P.R., is reported wounded and missing.

Lieut. J. J. Hanna, of the 3rd Tunnelling Company, Canadian Engineers, now in France, and at one time in C.P.R. service, has been elected an associate member of the Canadian Society of Civil Engineers.

Lieut. J. J. Harold, reported wounded in the arm by gun shot, in action in France, is son of L. Harold, Superintendent Transportation, Eastern Lines, G. T. R., Montreal. He went overseas July, 1915, with the 5th Canadian Mounted Rifles, and was wounded at Ypres. He won his commission on the field. Prior to enlistment he was in his third year in arts at McGill University.

Lieut. Gerald Hiam, who was reported early in November as having been wounded, was District Passenger Agent, C.P.R., at Fort William, Ont., until the summer of 1915, when he went into the 73rd Battalion, Montreal, as a lieutenant, and then transferred to the 198th Battalion (Buffs) Toronto, as captain. In order to get overseas quickly he reverted to lieutenant, went to England in Sept., 1916, and to France in Oct., 1916, with the 14th Battalion (Royal Montreal) in which he was promoted to second in command of A Company. His brother, T. A. Hiam, formerly private secretary to Sir Donald Mann, is Captain and Adjutant of the 198th Battalion.

Lt. Col. Thos. C. Irving, Jr., D.S.O., of Toronto, was reported in the casualty list of Nov. 5, as having died of wounds. Subsequently it was learned that he was killed almost instantly by a bomb from a German aeroplane while sitting in his dugout at the divisional headquarters. He was born in Toronto in 1879 and took a civil engineering course at Toronto and McGill Universities. For some time he was on the Lake Superior Corporation's staff at Sault Ste. Marie. and in 1905 was one of the incorporators of the Standard Inspection Bureau of Canada, Ltd., Toronto, of which he was Sec.-Treas. until its absorption by Robert W. Hunt & Co., Ltd., in 1910, when he became Vice President of the latter company. In 1898 he received a commission in the 2nd Field Company, Canadian Engineers, Military District 2, becoming captain June 1, 1911. On the outbreak of war he went with his company to Valcartier Camp, Que., and proceeded to England with the 1st Canadian Expeditionary Force in Oct., 1914, being second in command of No. 2 Field Company under Major Lindsay. He went to Belgium in Feb., 1915 in command of the company, as Major Lindsay, owing to an accident, had to remain in England, and he continued in command through the operations at Fleurbaix and the second battle of Ypres, and until just before Festubert, when Major Lindsay again took command. After the company had moved up to Romarin, Major Lindsay was made a lieutenant colonel. Capt. Irving becoming Major and being given command of No. 2 Field Company, in which position he remained while the company was in the Messines district, and after it was moved back to the Ypres salient. In Oct., 1916, Lt. Col. Insksetter, commanding the 4th Canadian Divisional Engineers having died from shrapnel wounds, Major Irving was appointed C.R.E. to

succeed him, was promoted to Lieutenant Colonel and was awarded the D.S.O.

Capt. B. L. Johnson, who is reported to have been awarded the Distinguished Service Order for services in submarine operations within the war zone, was associated with the Pacific coast marine service for several years. He was for some time in the service of the Union Steamship Co. of British Columbia, then with the Boscowitz Steamship Co., and was the first master of the Grand Trunk Pacific Steamship Co.'s s.s. Prince Rupert. Some time prior to the war he resigned that service in order to become a pilot at Vancouver, which position he held when he entered the navy.

Lt. Col. W. B. Kingsmill, of Saunders, Torrance & Kingsmill, solicitors, Michigan Central Rd., Toronto, who went overseas in command of the 123rd Battalion from Toronto, has been given the Colonial Auxiliary Force's Officers' Decoration.

Major A. C. Lewis, formerly Secretary, Toronto Harbor Commission, who was reported wounded, Sept. 1, was reported on Oct. 31 as being in a London hospital to undergo an operation. He was said to be also suffering from nervous trouble. He went overseas as second in command of the 216th Battalion.

Capt. Donald M. Mathieson, who has applied for transfer from associate member to member, Canadian Society of Civil Engineers, was born at St. Marys, Ont., Oct. 13, 1884, educated at Upper Canada College, Toronto, 1899 to 1902; graduated Royal Military College, Kingston, 1905, and at McGill University, Montreal, 1907, as B.Sc. (C.E.), since when his record has been as follows: Summers of 1902 to 1907 on C.P.R. and Grand Trunk Pacific Ry. construction; autumn of 1907 in charge of erection of steel of harbor sheds, Montreal, for Dominion Bridge Co.; spring of 1908, in designing office, Dominion Bridge Co.; 1908 to 1909 general contractor; 1909 organizing steel erection department for Peter Lyall & Sons; 1910-11 engineer in charge of installation, hydraulic mining plant, for Cache Creek Mining Co., in Alaska; 1912, general contractor, Vancouver; 1913-14 consulting engineer, Vernon, B.C.; entered Canadian army in 1914 in 2nd Field Co., Canadian Engineers, at Valcartier, Que., and proceeded to England and afterwards to France, where he was wounded, and invalided to Canada, in 1916, since when he has been on headquarters staff, Military District 2, Toronto, and is now officer commanding Spadina Military Hospital, Toronto.

Lt. Col. L. T. Martin, of the 7th Railway Battalion, now at the front, will be the union candidate for the representation of South Renfrew, Ont., in the Dominion Parliament. He is closely connected with M. J. O'Brien, railway contractor, etc., Renfrew, Ont.

Lieut. D. N. McIntyre, formerly Deputy Minister of Fisheries for British Columbia, reported killed at Passchendaele, Nov. 13, enlisted as a private, and was later given a commission in the British Columbia "Bantam" battalion, and went overseas early in the year. He was a nephew of D. M. McIntyre, K.C., Chairman, Ontario Railway and Municipal Board, and had served on the Montreal Star and the Victoria Colonist.

Second Lieut. G. W. Murrell, Royal Fusiliers, who has been awarded the Military Cross for bravery and devotion to duty during an enemy counter attack, was for several years prior to the war, in the Passenger Department, Allan Line Steamship Co., London, Eng. During the action in which he won the cross, he took up reinforcements, and though wounded in three places, took command of the situation when all other officers were casualties, remaining at his post for 12 hours after the action.

Engineer Lieut. Commander Jno. Quine, Second Engineer of H.M.S. Princess Margaret, who has been awarded the Distinguished Service Order, was for a number of years in the British Columbia coastwise trade service, as engineer, on C.P.R. and Grand Trunk Pacific steamships. When war broke out he was Chief Engineer of the G.T.P. s.s. Prince Albert and immediately proceeded to England and offered himself for service. The Princess Margaret is one of the two steel passenger steamships built on the Clyde, for the C.P.R. British Columbia coast service, and was commandeered by the British Admiralty when war broke out, together with her sister ship, Princess Irene which had then just been completed. Shortly after being taken over, the Princess Irene was destroyed by an explosion in the River Thames.

Col. G. S. Rennie, C.A.M.C., formerly Chief Surgeon, Dominion Power & Transmission Co. and Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., is among those whose names have been brought to the notice of the Secretary of State for War for distinguished service rendered in connection with the war.

Lieut. J. B. Rose, who was reported wounded recently, then wounded and missing, and later a prisoner of war at Limburg, was, prior to the war, in the British Columbia Electric Ry. service at Vancouver. He was a captain in a British Columbia regiment, and reverted in rank to go to France.

Capt. Shaughnessy, only surviving son of Lord Shaughnessy, was stated in a London cablegram of Nov. 6 as about to return to Canada for family reasons.

W. H. Stewart, formerly Assistant Superintendent, C.P.R., Farnham, Que., and latterly Purchasing Agent, Imperial Munitions Board's Shipbuilding Department, Ottawa, has been transferred to the staff of the British War Mission at Washington, of which Sir Charles Gordon, of ton, of which Sir Charles Gordon is Vice Chairman.

Bombardier Francis Vivian Morton, who was killed in action in Belgium, Nov. 10, was son of J. D. Morton, Assistant Comptroller, Canadian Northern Ry., Toronto. He was born Dec. 11, 1895, and was a second year student at Toronto University when he enlisted, Mar. 18, 1915, with the first university unit, C.F.A. He left Canada for overseas Aug. 4, 1915, and arrived in France, Jan. 18, 1916.

Lieut. C. Wakeford, R.N.R., whose death by the sinking of H.M.S. Champagne, in the North Sea Oct. 9, was announced recently, was formerly an officer on the C.P.R. s.s. Empress of Ireland, and was on board when she was run down and sunk in the St. Lawrence River, May 29, 1914, when he was instrumental in saving a number of lives, including his father, who was a passenger on the vessel. He was in the naval service from the time war broke out, and was acting as Assistant Paymaster.

W. H. Watson, heretofore Assistant City Ticket Agent, Canadian Northern Ry., Regina, Sask., has enlisted for military service, and is now a sergeant, local headquarters staff, Military District 12, A. D. of S. & T.

Lieut. F. B. Webster, of the Royal Flying Corps, who died recently of wounds received while flying in the neighborhood of Ypres, France, was a native of New Zealand, and came to Canada about 12 years ago. For some time prior to enlisting he was in the Dominion Government telegraph service in northern British Columbia.

The Victory Loan and Transportation Interests.

At the time of writing (Nov. 29) the subscription lists for the Dominion's Victory Loan of $150,000,000 are still open, but the amount originally asked for has been very considerably oversubscribed. Those responsible for the huge publicity campaign, which probably eclipses anything in the way of advertising hitherto attempted on this continent, set themselves to obtain subscriptions for double that amount, and it seems altogether likely that the total subscriptions, when the lists close Dec. 1, will be at least $300,000,000. The C.P.R. definitely took $5,000,000 of the bonds, and Lord Shaughnessy stated that should the $300,000,000 be reached, the company would take an additional $5,000,000. The G.T.R. and Canadian Northern Ry., as well as several other of the larger companies completed arrangements whereby their employes were enabled to take up bonds by paying for them on the instalment plan, the companies to look after the payments as they become due, and the employes signing agreements permitting the deduction of such payments from their wages.

Among the transportation companies, and other companies and individuals associated with or interested in such companies, who subscribed to the loan, are: C.P.R., $5,000,000, and possibly a further $5,000,000; Canadian General Electric Co., $3,155,000; Dominion Steel Corporation, $3,000,000; Steel Co. of Canada, $1,500,000; Canada Steamship Lines, Ltd., $1,000,000; Great Lakes Transportation Co., $365,000; R. W. Leonard, formerly chairman, National Transcontinental Ry. Commission, $300,000; Sir Herbert Holt, director, C.P.R., $270,000; Canadian Locomotive Co., $250,000; Sir Augustus Nanton, director, C.P.R.. $250,000; Dominion Copper Products Co., $250,000; Dominion Bridge Co., $250,000; Bell Telephone Co., $225,000; Canada Foundries & Forgings Co., $200,000; James Carruthers, President, Canada Steamship Lines, Ltd., $100,000; J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd., $100,000; Lord Shaughnessy, President, C.P.R., $100,000; R. B. Angus, director, C.P.R., $100,000; Mark Workman, President, Dominion Steel Corporation, $100,000; Keystone Transportation Co., Montreal, $100,000; R. M. Wolvin, President, Montreal Transportation Co., $100,000; Northern Electric Co., Montreal, $100,000; Lorne C. Webster, President, Canada Shipping Co., Montreal, $100,000; Hon. F. L. Beique, director, C.P.R., $70,000; Dominion Wire Rope Co., Montreal, $50,000; W. G. Ross, President, Montreal Harbor Commission, $50,000; Farquhar Robertson, member F. H. Hopkins & Co., Montreal, $50,000; Canada Iron Foundries, Ltd., Montreal, $50,000; Atlas Construction Co., Montreal, $40,000; Revillon Freres, Montreal, $40,000; E. W. Beatty, K.C., Vice President and General Counsel, C.P.R., $30,000; Wm. Lyall, President, Wm. Lyall Shipbuilding Co., $25,000; Shedden Forwarding Co., $25,000; Hugh Paton, President, Shedden Forwarding Co., $25,000.

Dearborn Chemical Co. of Canada Ltd., has appointed Taylor and Arnold, Ltd., of Montreal, Winnipeg and Vancouver, as its exclusive sales agents in Canada.

Mainly About Railway People Throughout Canada.

H. B. Voorhes has been appointed General Superintendent of Transportation, Baltimore & Ohio Rd., Baltimore, Md.

G. C. Jones, who was appointed Assistant to President, G.T.R. at Toronto, recently, has taken up house at Inglewold, Avenue Road Hill, Toronto.

F. W. Alexander, Engineer, Alberta District, C.P.R., Calgary, has been transferred from associate member to member Canadian Society of Civil Engineers.

W. Ord, who has been Boiler Shop Foreman, G.T.R., at Stratford, Ont., for some 20 years and who is a capital shot, spent his holidays deer shooting, in the Blind River District, recently.

A. E. Stevens, General Superintendent, Western District, Canadian Northern Ry., Moose Jaw, Sask., was called to Moncton, N.B., Nov. 16, on account of the death of his mother there.

Sir Edmund Osler, one of the C.P.R. directors, who has represented West Toronto in the House of Commons for many years, declined to be a candidate in the pending general elections.

H. J. Fuller, President, Canadian Fairbanks-Morse Co., has been appointed to represent the Imperial Munitions Board in New York, in connection with munitions and marine equipment contracts.

G. H. Patrick, senior canal superintendent, Department of Natural Resources, C.P.R., Strathmore, Alta., has been elected an associate member of the Canadian Society of Civil Engineers.

A. D. Ferguson, draftsman and office assistant to Division Engineer, Hudson Bay Railway, Pas, Man., has been transferred from student to associate member Canadian Society of Civil Engineers.

Lord Shaughnessy, R. B. Angus, C. R. Hosmer and E. W. Beatty, directors of the C.P.R., and E. J. Chamberlin, ex President, G.T.R., and G.T.P.R., have been re-elected directors of the Royal Trust Co.

George C. Conn, whose resignation as Freight Traffic Manager, Pere Marquette Ry., Detroit Mich., was announced in our last issue, has been appointed General Traffic Manager, Buick Motor Co., Flint, Mich.

C. N. Monsarrat, M. Can. Soc. C. E., Chairman, Quebec Bridge Commission, gave an address on the construction of the bridge, to members of the Canadian Society of Civil Engineers at Montreal, Nov. 22.

R. W. Leonard, M.Can.Soc.C.E., St. Catharines, Ont., formerly Commissioner, National Transcontinental Ry., declined to be nominated as a union candidate for Lincoln County, in the pending Dominion elections.

E. H. Pacey, in Quebec Bridge Commission service at Montreal, and formerly with the C.P.R., Intercolonial Ry., and G. T. R., has been transferred from junior to associate member, Canadian Society of Civil Engineers.

R. J. C. Stead, Publicity Agent, Natural Resources Department, C.P.R., Calgary, Alta., acted as chairman of the publicity committee for the promotion of the sale of victory loan bonds in Southern Alberta recently.

Chas. A. Cairns, heretofore General Passenger and Ticket Agent, Chicago & Northwestern Ry., has been appointed Passenger Traffic Manager. J. L. Ferguson, heretofore Assistant General Passenger & Ticket Agent, has been appointed General Passenger Agent.

Miss E. M. Story, youngest daughter of D. A. Story, Freight Traffic Manager, Canadian Government Railways, Moncton, N.B., was married there, recently, to Capt. J. N. Gibson, of Kingston, Ont., of the Canadian Ordnance Corps.

E. J. Chamberlin, formerly President, Grand Trunk and Grand Trunk Pacific Railways, and Mrs. Chamberlin, have, on account of the latter's health, gone to California for the winter, and are staying at the Huntingdon Hotel, Passadena.

Lady Mackenzie, wife of Sir Wm. Mackenzie, President, Canadian Northern Ry., died at Toronto, Nov. 29, after several months illness, following an operation. She was buried at Kirkfield, Ont., the old family home.

J. T. Gillick, formerly Assistant General Manager, Chicago, Milwaukee & St. Paul Rd., has been appointed General Manager, succeeding J. C. Hart, assigned to other duties. Macy Nicholson, formerly Assistant to Operating Vice President, Great Northern Railway Co., succeeds Mr. Gillick.

L. J. M. Howard, formerly with the C.P.R., and in 1916 serving on the valuation staff of the commission of enquiry into railways and transportation, has been elected an associate member, Canadian Society of Civil Engineers. He is at in the Imperial Munitions Board's service in Ottawa.

Brig. General H. H. McLean, K.C., of St. John, N.B., formerly President, St. John Ry., has been transferred to the retired list, with honorary rank of Major General. He was member for Queens-Sunbury in the last parliament and is now a candidate for the representation of Royal, N.B.

H. E. Stevens, Assistant to District Engineer, British Columbia Public Works Department, Courtenay, has been elected an associate member Canadian Society of Civil Engineers. He was, from 1902 to 1912 in C.P.R. service, and in 1912 was Resident Engineer, Kettle Valley Ry. Penticton, B.C.

J. Frater. Taylor, President, Algoma Steel Corporation, has announced his retirement at the end of the year, but has stated that he will retain his connection with the company, in an advisory capacity, as Chairman of the Lake Superior Corporation. It is reported that he will be succeeded by W. C. Franz.

Guy Tombs, General Freight Agent, Eastern Lines, Canadian Northern Ry., Montreal, is one of the members of the examining board of the Montreal branch of the aerial service, which meets twice a week there to interview and ercommend prospective candidates for admission to the Royal Flying Corps.

W. R. Payne, who died at Moncton, N.B., Oct. 28, after a short illness, was for 20 years station agent, Intercolonial Ry., at Bathurst, N.B., and for about seven years prior to his retirement in 1915, station agent at Newcastle, N.B. Two of his sons are at present in Canadian Government Railways service, one at Halifax and the other at Moncton.

A. C. Boyce, K.C., whose appointment as a member of the Board of Railway Commissioners was announced in our last issue, was presented with a gold mounted walking stick, and a gold mounted umbrella for Mrs. Boyce, by a number of friends at a farewell gathering, Nov. 8, on leaving Sault Ste. Marie, to take up his residence at Ottawa.

W. A. Griffin, Superintendent of Traffic, Timiskaming and Northern Ontario Ry., North Bay, Ont., A. A. Cole, Mining Engineer, and the conductor and locomotive man of the Governor General's train, were each persented with a gold stick pin by the Duke of Devonshire, as an appreciation of their services during his tour of Northern Ontario during November.

W. P. Kellett, formerly Manager and Chief Engineer, Lake Erie & Northen Ry., and later, President, Dominion Steel Products Co., Brantford, Ont., is President of the American Steel Products Corporation, which has been organized with an authorized capital of $1,000,000, and which has contracts for shafting, etc., for vessels being built by the United States Government.

Joseph Gerard Elzear Giasson, who has been appointed Auditor of Freight and Passenger Receipts, Quebec Ry. Light & Power Co., Quebec, Que., was born at St. Jean Port Joly, Que., June 4, 1887, and entered the company's service in Nov. 1905 since when he has been, to April 1909, telegraph operator and station agent, Ste. Anne and Beauport; May 1909 to Oct. 31, 1917, Assistant Auditor, Quebec.

Sir Henry Drayton, Chief Railway Commissioner for Canada has been appointed controller of the production and distribution of electrical energy by companies generating or distributing electrical energy in Ontario. He will determine preferences and priorities in the supply of such electrical energy, to the end that a sufficient supply shall be furnished to factories and users engaged directly or indirectly in munition work, or work for any of the allied Governments, and also for municipal and public utility requirements.

O. M. Lavoie, who has been appointed acting Superintendent, Car Service, Eastern Lines, C.P.R., Montreal. was born at St. Cyrille de Wendover, Que.. Oct. 16, 1882, and entered railway service in March 1889, since when he has been, to April 1900, telegraph operator Intercolonial Ry.; Apr. 1900 to Sept. 1902, telegraph operator, Quebec, Montreal and Southern Ry.; Sept. 28, 1902 to July, 1909, operator, C.P.R.; July 19, 1909 to Jan. 15, 1916, dispatcher, C.P.R., Farnham, Que.; Jan. 15, 1916, to Oct. 30, 1917, Chief Dispatcher, Farnham Division, Quebec District, Farnham, Que.

Ross Garfield Edwards, who has been appointed Assistant Superintendent, Trenton Division, Ontario District, C.P.R., Havelock, Ont., was born at Maitland, Ont., Oct. 10, 1883, and entered C.P.R. service Dec. 24, 1900, since when he has been, to May 31, 1901, caller; May 31, 1901 to July 1902, checker; July 1902 to Apr. 14, 1904, yard office clerk; Apr. 14, 1904 to Oct. 21, 1906, chief clerk; Oct. 21, 1906, to Apr. 5, 1907, yard man and yard foreman; Apr. 5, 1907, to Feb. 11, 1909, Yardmaster; Feb. 11, 1909 to Maq 31, 1915, General Yardmaster, all at Smiths Falls, Ont.; May 31, 1915, to Oct. 29, 1917, Assistant Superintendent, Montreal Terminals Division, Quebec District, Montreal.

William Robert Howard, who has been appointed Chief Dispatcher, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont., was born at St. Andrews,

N.B., Sept. 14 1871 and entered railway service in Sept. 1887, since when he has been, to June, 1889, telegraph operator at various points, New Brunswick Ry.; June 1889 to Oct. 1891, baggage man, C.P.R., Megantic, Que., and St. John, N.B.; Oct. 1891 to Oct. 1895, agent and operator, C.P.R., at different points on Atlantic Division; Oct. 1895 to Nov. 1912, dispatcher, C.P.R., Brownville Jct., Me.; Nov. 1912 to Mar. 1913, acting Chief Dispatcher, Brownville Jct., Me.; Mar. 1913 to Oct. 1917, Chief Dispatcher, Brownville Jct., Me.

Frank Lee, who has been appointed Engineer Maintenance of Way, Eastern Lines, C.P.R., Montreal, was born at Chicago, Ill., Mar. 7, 1873, and entered railway service in Jan., 1895, as rodman and draftsman on location and construction of extensions to the Government railways in Trinidad, British West Indies. He has been, from May, 1896, to Nov. 1902, on construction and maintenance, Chicago and North Western Ry.; Nov. 1902 to Jan. 1904, Signal Engineer, C.P.R., Montreal; Jan. 1904, to Aug. 1905, Assistant Engineer C.P.R., Winnipeg; Aug. 1905 to Apr. 1912, Division Engineer, C.P.R., Winnipeg; Apr. 1912 to Nov. 20, 1917, Principal Assistant Engineer Western Lines, C.P.R., Winnipeg.

M. K. Cowan, K.C., who died at Toronto, Oct. 28, after three months illness, was, from 1904 to 1910, Solicitor at Toronto for the G.T.R. The funeral took place at Brantford, Ont., Oct. 31, one of the honorary pall bearers being W. W. Pope, Secretary, Hydro Electric Power Commission of Ontario, and a former Solicitor for the G.T.R. Among G.T.R. officials present were W. S. Wilson, Superintendent of Transportation, Toronto; J. Beck, Superintendent, Toronto Union Station; W. H. Farrell, Superintendent Toronto Terminals; G. Mitchell, Superintendent of Buildings: R. H. Fish, Superintendent Stratford Division; P. J. Lynch, Superintendent Barrie Division; J. H. Gordon, Superintendent Hamilton Division; C. Forrester, Superintendent London Division.

George Collins, who has been appointed Superintendent, Quinte District, Ontario Division, Canadian Northern Ry., Trenton, Ont., was born at Carrying Place, near Trenton, Ont., July 20, 1860, and entered railway service June 1, 1882, since when he has been, to May 1884, timekeeper, Central Ontario Ry., Trenton, Ont.; May 1884 to May 1890, agent, same road; May 1890 to May 1892, dispatcher, same road; May 1892 to May 1894, Secretary-Treasurer, and Assistant Superintendent, same road; May 1894 to Oct. 1902, Secretary and General Superintendent, same road; Oct. 1902 to Dec. 1906, Receiver and Manager, same road; May 1903 to July 1914, also director, and from Mar. 1910 to July 1914, also General Manager, Irondale, Bancroft & Ottawa Ry., all at Trenton, Ont.; July, 1914 to Sept. 1, 1915, Superintendent, Ottawa Division, Canadian Northern Ry., Trenton, Ont.; Sept. 1, 1915, to Aug. 1916, Superintendent Branch Lines, Toronto District, Ontario Division, C.N.R., Trenton, Ont.; Aug. 1916 to Oct. 1917, Special Representative, C.N.R.

Samuel J. Hungerford, who has been appointed General Manager Eastern lines, Canadian Northern Ry., Toronto, was born near Bedford, Que., July 16, 1872, and entered railway service in May, 1886, since when he has been, to Feb. 1891, machinist apprentice, South Eastern Ry., and C.P.R., Farnham, Que.; May 1891 to Aug. 1894, machinist, at various points in Quebec, Ontario and Vermont; Sept. 1894 to Aug. 1897, charge man, C.P.R., Windsor St., Montreal; Aug. 1897 to Apr. 1900, Assistant Foreman, C.P.R., Farnham, Que.; Apr. 1900 to Feb. 1901, Locomotive Foreman, C.P.R., Megantic, Que.; Feb. to Sept. 1901, General Foreman, C. Feb. 1903, Locomotive Foreman, C.P.R., Cranbrook, B.C.; Feb. 1903 to Jan. 1904, Master Mechanic, C.P.R., Western Division, C.P.R., Calgary, Alta.; Jan. 1904 to Dec. 1907, Superintendent, Locomotive Shops, C.P.R., Winnipeg; Jan. 1908 to Feb. 1910, Superintendent of Shops, C.P. R., Winnipeg; Mar. 1910 to Apr. 1915, Superintendent of Rolling Stock, Canadian Northern Ry., Winnipeg, and from May 1915 to Nov. 1, 1917, same position, Toronto.

G. A. Hoag, who has been appointed Superintendent, Superior District, Ontario Division, Canadian Northern Ry., Hornepayne, Ont., was born May 31, 1866, and educated at Kingston, Ont., public schools and business college. He entered railway service June 8, 1884, as switchman, G.T.R., and served at various points until May 3, 1886, when he was appointed night operator, and promoted to day operator and relieving agent, Jan. 1888. From 1899 to 1901, he was agent, same road, Trenton, Ont.; 1901 to 1905, Yardmaster same road, Belleville, Ont.; Oct. 1905 to Mar. 1908, Trainmaster, Central Ontario Ry., Trenton, Ont.; Mar. 1, 1908 to July 1914, Superintendent, same road, Trenton, Ont.; July 1914 appointed Superintendent of Car Service, Eastern Lines, Canadian Northern Ry., Toronto; and later, to Apr. 1916, Assistant Superintendent, same road, Ottawa, Ont.; Apr. to Aug. 1916, Assistant Superintendent. Toronto District, Ontario Division, same road, Rosedale, Toronto; Aug. 1916 to Apr. 1917, Assistant Superintendent, Toronto District, Ontario Division, same road, Trenton, Ont.; Apr. to Nov. 1, 1917, Assistant Superintendent, Toronto District, Ontario Division, same road, Toron-

John Andrew Heaman, B.Sc., A.M.Can. Soc.C.E., whose appointment as Assistant Chief Engineer, Grand Trunk Pacific Ry., Winnipeg, was announced in our last issue, was bonr at Memphis, Tenn., June 3, 1874, and was educated in public school and at Collegiate Institute London, Ont., and McGill University, graduating in 1902. He served as an articled pupil to Moore and Henry, engineers and surveyors, London, Ont., from 1893 to 1898, and holds diplomas as Dominion and Ontario Land Surveyor. He entered railway service in Apr. 1901. since when he has been, to Sept. 1901, instrument man, G.T.R., St. Catharines and Port Union, Ont.; Apr. to Nov. 1902, Resident Engineer, G.T.R., Oshawa, Ont.; Nov. 1902 to Nov. 1903, Assistant Resident Engineer, G.T.R., Toronto; Nov. 1903 to May 1905, Assistant Engineer in charge of location party east of Winnipeg, Grand Trunk Pacific Ry.; May 1905 to Nov. 1906, Division Engineer in charge of location and construction east of Winnipeg, National Transcontinental Ry.; Nov. 1906 to Oct. 1908, Assistant District Engineer, N.T.R., Ont.; Oct. 1908 to June 1910, Assistant District Engineer, G.T.P.R., Kenora, Ont., and Winnipeg; June 1910 to Apr. 1911, District Engineer, G.T.P.R., Winnipeg; Apr. 1911 to Mar. 1912, Office Engineer, G.T. P.R., Winnipeg; Mar. to Aug. 1912, Division Engineer, G.T.P.R., Jasper, Alta.; Aug. 1912 to Nov. 1, 1917, Assistant to Chief Engineer, G.T.P.R., Winnipeg.

Agreement for Acquisition of Canadian Northern Railway Stock.

The agreement between the Dominion Government and the holders of Canadian Northern Ry. capital stock has been signed and the following summary of its principal provisions has been given out:

The agreement provides for the naming of the arbitrators, one by the government, and one by the stockholders, the two so named to appoint a third. Should they fail to agree, the third arbitrator is to be appointed by the Chief Justice of the Exchequer Court. No arbitrator is named in the agreement, but the government arbitrator ras already been selected, viz., Sir William Meredith, Chief Justice of Ontario, and it is said that Wallace Nesbitt, K.C., will represent the owners of the $60,000 of stock.

The government already owns 400,000 shares of the stock. This represents 40% of the entire stock holdings and was taken by the government in 1914, on account of the guarantee of the company's bonds then given. The other 600,000 shares are now to become the property of the government and have, it is said already been transferred. Their par value is $60,000,-000. The agreement nxes the maximum to be paid for these 600,000 shares at $10,000,000. No greater sum therefore can be paid, no matter what their value may be found to be by the arbitrators. If the value is found to be less than $10,-000,000, then the less sum will be paid. It is said that Mackenzie, Mann & Co. Ltd., own approximately five-sixths of these shares. Consequently the maximum that can be paid to them will be something over $8,000,000. As, however, these shares are pledged to their bankers as part security for advances of various kinds, the monies doubtless will be paid to the bank.

The duty of the arbitrators is to take evidence such as may be offered on behalf of the government and of the stockholders. Both parties will be heard in the usual way as before all arbitrations. There has been no previous inquiry into the value of this stock, at which both parties have been heard. After the taking of evidence and the making of any further investigations which the arbitrators may deem useful, it will be for them to decide what the value of the stock really is. The agreement does not call upon the arbitrators to adopt any particular method. They may enquire what the stock could be sold for; they may ascertain the value of the assets and deduct the liabilities. They may take into consideration earning power. They are not restrained in any way but simply required to get at the fair value in the best way possible. It is further specifically provided that if the arbitrators should see fit to take into consideration the reproduction cost of the system, then they must not include therein the increase in value, due to the war, of labor, material, equipment, or of any property whatever. The shareholders wil lbe required to disclose all liabilities of the company of every kind, to the arbitrators. Should, however, it be found later that liabilities exist that were not disclosed, or in excess of those disclosed, then a corresponding deduction will be made from any award given.

The arbitrators must commence work forthwith, and complete the taking of

evidence in such time as to announce their award before Mar. 1, 1918. Pending the award, it is provided that nothing but ordinary operating obligations shall be entailed, and no obligation shall be entered into, not to be completely executed within six months, except with the approval of the Minister of Railways. All costs connected with the arbitration are to be in the discretion of the arbitrators and to be taxed by an officer.

Prior to the Canadian Northern bill coming before the Senate last term, two of the directors resigned, viz., Senator Frederic Nichols, who had been a director from the formation of the company, and Senator H. W. Richardson, who had been one of the government directors for the past year or so. Graham A. Bell, C.M.G., Assistant to the Minister of Railways and Financial Controller of the Railway Department, has been appointed a director to succeed Senator Richardson. The other director has not been appointed. It is stated, apparently with authority, that Hon. Frank Cochrane, ex Minister of Railways, will be appointed chairman.

Sir Wilfred Laurier in his pre-election manifesto, issued recently, in referring to the matter, said: "The opposition asked that the report of the arbitration, whatever it be, should be laid before parliament for approval. Though this motion was rejected it is the right of the people to declare that the case should not have been finally closed by the action of a moribund parliament, but that the whole matter should be reported to and adjudicated upon by the new parliament."

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canadian Government Railways.—F. W. ROBERTSON, heretofore District Passenger Agent, Halifax, N.S., has been appointed Superintendent, Sleeping and Dining Car Service, Eastern Lines, vice L. B. Archibald, retired. Office, Halifax, N.S.

E. CAMERON, heretofore Commissary Agent, Halifax, N.S., has been appointed Assistant Superintendent, Sleeping and Dining Car Service, Eastern Lines. Office, Halifax, N.S.

A. J. TINGLEY, heretofore Special Agent, has been appointed Chief of Railway Police. Office, Moncton, N.B.

Following is a list of Police Inspectors and their districts: T. W. Moore, District 1, Montreal to Mont Joli; O. B. Lawson, District 2, Mont Joli to Moncton; J. J. Dunphy, District 3, St. John to Truro; Wm. Tupper, District 4, Truro to Syrney; E. L. Cantin, District 5, Diamond to Pacific Jct.; E. W. Power, District 6, Truro to Halifax.

H. C. MACFARLANE has been appointed Distric Passenger Agent, Halifax, N.S., vice F. W. Robertson, transferred to Sleeping and Dining Car Department.

Canadian Northern Ry.—S. J. HUNGERFORD, heretofore Superintendent of Rolling Stock, Toronto, has been appointed General Manager, Eastern Lines, vice L. C. Fritch, who resigned some time ago, on his appointment as General Manager, Seaboard Air Line Ry., Norfolk, Va. Office, Toronto.

C. PRICE GREEN, heretofore in the Publicity Department, has been appointed Industrial Commissioner, vice D. F. Coyle, resigned. Office, Toronto.

S. H. SYKES, M.Can.Soc.C.E., of the Engineering Department. has been transferred from Vancouver to Toronto.

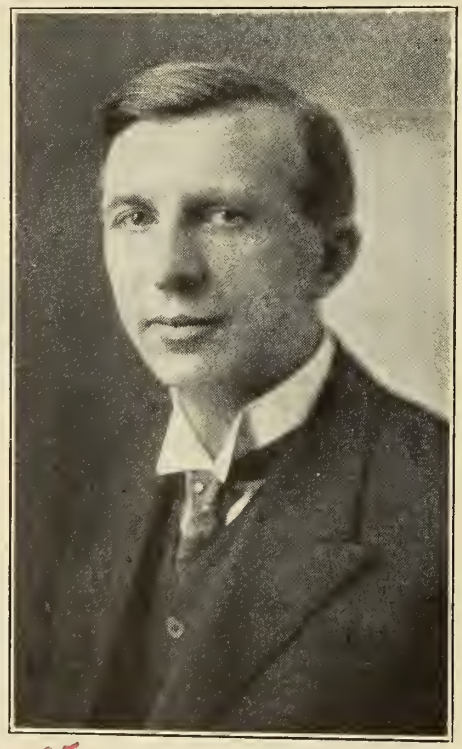
GEORGE COLLINS, whose appointment as Superintendent Branch Lines, Toronto District, Ontario Division, Trenton, Ont., was announced in our last issue, has been appointed Superintendent, Quinte District, Ontario Division, comprising, Picton, Maynooth, Irondale, Twe prising, Picton, Maynooth Irondale, Tweed Kingston, and Brockville Subdivisions, and Trenton Terminals. Office, Trenton, Ont.

W. R. KELLEY, heretofore Superintendent, Lake Superior District, Ontario Division, Capreol, Ont., has been appointed Superintendent, Nipissing District, Ontario Division, comprising Ruel, Sudbury, North Bay and Pembroke Subdivisions, and Foleyet, Sudbury and Parry Sound Terminals. Office, Capreol, Ont..

G. A. HOAG, heretofore Assistant Superintendent, Toronto District, Ontario Division, Toronto, has been appointed Superintendent, Superior District, Ontario Division, comprising Nipigon, Long Lake and Oba Subdivisions. Office, Hornepayne, Ont.

D. J. MacINTOSH, heretofore chief clerk and Assistant Freight Agent, has been appointed Grain Agent, Port Arthur, Ont.

J. M. GRIEVE, heretofore Assistant Superintendent, has been appointed Superintendent, Sleeping, Dining and Parlor Cars and News Service, Western Lines,



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S. J. Hungerford
General Manager, Eastern Lines, Canadian Northern Railway.

vice O. C. Bishop, resigned. Office, Winnipeg.

H. B. WOLLEN has been appointed Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Western Lines, vice J. M. Grieve promoted. Office, Winnipeg.

C. H. WORBY, heretofore agent, has been appointed District Commissary Agent, Sleeping, Dining and Parlor Cars and News Service, Western Lines, Winnipeg.

G. A. CUNLIFFE, heretofore Superintendent, Division 3, Western District. Edmonton, Alta., has been appointed Superintendent, Division 4, Central District, vice I. L. Boomer transferred. Office, Brandon, Man.

W. L. LOOMIS has been appointed Road Foreman of Locomotives, Brandon, Man. This is a new position.

W. BLACK, heretofore Locomotive Foreman, Saskatoon, Sask., has been appointed Locomotive Foreman, Hudson Bay Jct., Sask., vice A. Clifton, transferred.

S. G. KATHAN, heretofore in Canadian Bank of Commerce service, has been appointed Assistant City Ticket Agent, C.N.R., Regina, Sask., vice W. H. Watson, enlisted for military service.

A. G. DeGUERRE has been appointed City Ticket Agent, Moose Jaw, Sask.

W. F. BROWN, heretofore Locomotive Foreman, Drumheller, Alta., has been appointed Night Locomotive Foreman, Saskatoon, Sask., vice W. Black, transferred.

F. J. MEYERS, heretofore Trainmaster, Division 3, Western District, North Battleford, Sask., has been appointed Trainmaster, Division 2, Western District. Office, North Battleford, Sask.

J. L. CAMERON, heretofore passenger conductor, Edmonton, Alta., has been appointed Trainmaster, Division 3, Western District, vice F. J. Meyers, transferred. Office, North Battleford, Sask.

J. IRWIN, heretofore Superintendent, Branch Lines, Toronto District, Trenton, Ont., has been appointed Superintendent, Division 3, Western District, vice G. A. Cunliffe transferred. Office, Edmonton, Alta.

A. CLIFTON, heretofore Locomotive Foreman, Hudson Bay Jct., Sask., has been appointed Locomotive Foreman, Drumheller, Alta., vice W. F. Brown, transferred.

J. O. CAMERON has been appointed Travelling Freight Agent, Vancouver, V.C., vice S. Patterson resigned.

Canadian Pacific Ry.—E. MOORE, of the Financial and Accounting Vice President's office, and from Oct. 1916, when the company set up its own insurance fund, in charge of all insurance matters, has been appointed Insurance Commissioner, in charge of all the company's fire and marine insurance. Office, Windsor St. Station, Montreal.

FRANK LEE, heretofore Principal Assistant Engineer, Western Lines, Winnipeg, has been appointed Engineer Maintenance of Way, Eastern Lines, vice A. C. Mackenzie transferred. Office, Montreal.

O. M. LAVOIE, heretofore Chief Dispatcher, Farnham Division, Quebec District, Farnham, Que., has been appointed acting Superintendent of Car Service, Eastern Lines, vice W. M. Neal, whose appointment as Secretary, Canadian Railway Association for National Defence, was announced in our last issue. Office, Montreal.

F. A. WINTERSON has been appointed Assistant Superintendent, Laurentian Division, Quebec District, vice V. A. Harshaw transferred. Office, Montreal.

R. W. SCOTT, heretofore Assistant Superintendent, Trenton Division, Ontario District, Trenton, has been ap-

pointed Assistant Superintendent, Montreal Terminals Division, Quebec District, vice R. G. Edwards transferred. Office, Montreal.

T. J. McDONAGH, heretofore Assistant Foreman, Freight Car Shop, has been appointed General Foreman, Wood Freight and Steel Car Shop, Angus shops, Montreal.

H. J. MAIN, heretofere Chief Dis-Patcher, Smiths Falls Division, Quebec District, Smiths Falls, Ont., has been appointed Assistant Superintendent of that division. Office, Smiths Falls, Ont.

H. C. TAYLOR has been appointed Chief Dispatcher, Smiths Falls Division, Quebec District, vice H. J. Main promoted. Office, Smiths Falls, Ont.

R. G. EDWARDS, heretofore Assistant Superintendent, Montreal Terminals Division, Quebec District, Montreal, has been appointed Assistant Superintendent, Trenton Division, Ontario District, vice T. H. Hamilton, acting Assistant Superintendent transferred. Office, Havelock, Ont.

T. H. HAMILTON, heretofore acting Assistant Superintendent Trenton Division, Ontario District, Havelock, Ont., has been appointed Assistant Superintendent, Trenton Division, Ontario District, vice R. W. Scott, transferred. Office, Trenton, Ont.

D. S. SCHOFIELD, heretofore storekeeper, Revelstoke, B.C., has been appointed storekeeper, Fort William, Ont.

A. C. MACKENZIE, heretofore Engineer Maintenance of Way, Eastern Lines, Montreal, has been appointed Engineer Maintenance of Way, Western Lines, vice Frank Lee transferred. Office, Winnipeg.

P. J. SIVERTSON, heretofore Car Foreman, Swift Current, Sask., has been appointed Car Foreman, North Transcona, Man., vice H. K. York, transferred.

H. K. YORK, heretofore Car Foreman, North Transcona, Man., has been appointed Car Foreman, Swift Current, Sask., vice P. J. Sivertson, transferred.

G. PRATT, heretofore Locomotive Foreman, Strathcona, Alta., has been appointed Locomotive Foreman, Medicine Hat, Alta.

G. F. ROSENGREN, heretofore Storekeeper, Lethbridge, Alta., has been appointed Foreman of Stores, Ogden, Alta., vice A. Clark transferred.

G. H. CARTER, heretofore Relieving Paymaster, Winnipeg, has been appointed Paymaster, Calgary, Alta., vice A. Maguire.

J. A. McGOWN, heretofore Back Shop Foreman, Kamloops, B.C., has been appointed Locomotive Foreman, Red Deer, Alta., vice C. A. Boardman transferred.

C. A. BOARDMAN, heretofore Locomotive Foreman, Red Deer, Alta., has been appointed Locomotive Foreman, Strathcona, Alta., vice G. Pratt transferred.

A. CLARK, heretofore Foreman of Stores, Ogden, Alta., has been appointed Storekeeper, Revelstoke, B.C., vice D. S. Schofield transferred.

J. H. TAYLOR, heretofore of the company's British Columbia Lake and River Service, Nelson, B.C., has been appointed Assistant to the Manager, British Columbia Coast Service, vice Lincoln Smith, resigned to enter private business. Office, Victoria, B.C.

Edmonton, Dunvegan and British Columbia Ry., Central Canada Ry., Alberta and Great Waterways Ry.—R. M. HALPENNY, Superintendent, having resigned, A. G. SUTHERLAND, heretofore Assistant Superintendent, E. D. & B.C. R. and C. C. R., has been appointed Superintendent, E. D. & B.C. R. and C.C.R.; and R. CRAIG, heretofore Assistant Superintendent, A. & G. W. R., has been appointed Superintendent, A. & G. W. R. Offices, Edmonton, Alta.

R. LEE has been appointed Chief Dispatcher, Edmonton, Alta, vice G. Lomas, resigned.

Fredericton and Grand Lake Coal and Ry. Co., New Brunswick Coal and Ry. Co.—V. A. HARSHAW, heretofore Assistant Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal, has been appointed Manager, vice A. Sherwood resigned. Office, Fredericton, N.B.

Grand Trunk Pacific Ry.—J. A. HEAMAN, heretofore Assistant to Chief Engineer, has been appointed Assistant Chief Engineer, vice H. A. Woods resigned, and his former position has been abolished. Office, Winnipeg.

C. B. MUTCHLER, Signal Engineer, has also been appointed Assistant to General Superintendent, Winnipeg, vice I. A. Macpherson promoted. Office, Winnipeg.

R. M. MACMILLAN, heretofore local manager, G.T.P. Telegraph Co., Edmonton, Alta., has been appointed acting Division Superintendent of Telegraphs, lines in Ontario, Manitoba and Saskatchewan, with jurisdiction over all matters pertaining to construction and maintenance of telegraph and telephone lines, and operation of railway and commercial telegraphs; and also acting Superintendent of Time Service, vice F. T. Caldwell, on extended leave of absence, for military service with the U. S. Army. Office, Winnipeg.

I. A. MACPHERSON, heretofore Assistant to General Superintendent, Winnipeg, Man., has been appointed Superintendent, with jurisdiction Winnipeg, Man. to Watrous, Sask., Melville - Canora Branch, and Regina Division, Sask., vice H. McCall, promoted. Office, Melville, Sask.

H. McCALL, heretofore Superintendent, Melville, Sask., has been appointed General Superintendent, lines west of, but not including Edmonton, Alta., vice W. C. C. Mehan, granted leave of absence. Office, Prince Rupert, B.C.

The following station agents have been appointed: Semans, Sask., R. M. Sutherland; Venn, Sask., R. R. Dillabough; Asquith, Sask., H. A. Meggs; Reford, Sask., W. W. Barr; Estlin, Sask., C. F. Thomas; Gray, Sask., R. F. Wall; Otthon, Alta., C. Bradley.

Grand Trunk Western Ry. — G. W. DIXON, Chicago, Ill., has been elected a director, succeeding his father, the late Arthur Dixon.

Great Northern Ry.—A. H. HEBB, heretofore ticket clerk, Vancouver, B.C., has been appointed City Passenger Agent Victoria, B.C., vice H. H. Wallace, promoted.

H. H. WALLACE, heretofore City Passenger Agent, Victoria, B.C., has been appointed Assistant Agent, Great Falls, Mont.

Kettle Valley Ry.—E. N. WITTER has been appointed acting Master Mechanic, vice W. J. McLean resigned. Office, Penticton, B.C.

W. J. CALVIN has been appointed General Roadmaster, Penticton, B.C. This is a new position.

Michigan Central Rd.—W. C. DOUGLAS has been appointed Division Freight Agent, Detroit, Mich., vice F. J. Parker promoted.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—B. NEWHOUSE, heretofore Auditor of Traffic Accounts, has been appointed Assistant Comptroller, vice A. R. Marshall resigned, and his former position has been abolished. Office, Minneapolis, Minn.

R. A. MUELLER has been appointed Freight Auditor, Minneapolis, Minn.

New Brunswick Coal & Ry. Co.—See Fredericton and Grand Lake Coal and Ry. Co.

New York Central Rd.—E. R. BISSELL, heretofore Superintendent, Toledo Division, Cleveland, Ohio, has been appointed Superintendent, Detroit Division, Detroit, Mich., vice F. F. Riefel, transferred.

E. THWAITES, heretofore Superintendent, Detroit Division, Detroit, Mich., has been appointed Superintendent, Toledo Division, Cleveland, Ohio, vice E. R. Bissell transferred.

F. F. RIEFEL, heretofore Superintendent, Detroit Division, Detorit, Mich., has been appointed Superintendent, Michigan Division, Toledo, Ohio, vice E. Thwaites transferred.

Roberval - Saguenay Ry.—J. A. VALLERAND, heretofore Auditor of Freight and Passenger Receipts, Quebec Ry., Light, Heat and Power Co., Quebec, Que., has been appointed Superintendent, and General Freight and Passenger Agent, reporting to the General Manager. Office, Chicoutimi, Que.

Union Pacific Rd.—E. ALEXANDER, City Ticket Agent, Chicago, Milwaukee & St. Paul Ry., Vancouver, B.C., is reported to have been appointed ticket agent, U. P. R., there.

Standard of Practice of Business Papers.

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself:

1. To consider, first, the interests of the subscriber.

2. To subscribe to and work for truth and honesty in all departments.

3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive.

4. To refuse to publish "puffs," free reading notices or paid "write-ups"; to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?"

5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity.

6. To solicit subscriptions and advertising solely upon the merits of the publication.

7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements, subject to proper and authentic verification.

8. To co-operate with all organizations and individuals engaged in creative advertising work.

9. To avoid unfair competition.

10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The papers subscribing to these standards are the publications of the Associated Business Papers, Inc., forming the Business Press Department of the Associated Advertising Clubs—nearly 100 in number—the cream of the technical and trade papers of Canada and the United States. Canadian Railway and Marine World is one of them.

Locomotive Design and Construction from a Maintenance Standpoint.

The paper on this subject, by W. H. Winterrowd, Assistant to Chief Mechanical Engineer, C.P.R., read before the Canadian Railway Club in Montreal recently, and published in Canadian Railway and Marine World of November, was discussed by a number of the club's members. The following are the most important parts of the discussion:

W. H. Sample, Superintendent of Motive Power, G.T.R.: The length of boiler tubes, which Mr. Winterrowd has mentioned, is a very important feature and presents a more modern idea than we have had in the past. It seems to me that with the object of getting more heating surface out of our boilers we have in the past made the tubes too long. I should like to ask Mr. Winterrowd's experience with the modern methods of taking care of tubing. I would also ask him about the welding in of tubes, which I notice he has not touched upon, and which is more or less of an experiment at present, and we have been reluctant about going into it too extensively, as there is a question whether it is going to be the proper method or not.

Also about dump grates—if he thinks this is the best way of handling fires, etc., in the big locomotive of today.

What is his opinion on the merits of Vanadium steel frames, and on the case-hardening of motion parts, pins, etc.?

Another question which has been more or less under discussion at our Master Mechanics' meetings is the piston fit in the crosshead. On some of our power we have a method of fitting the rod with a shoulder.

I would also like to ask about the drifting valve and whether or not he considers it a necessity, from his experience with the C.P.R. superheater power.

Jas. Powell, Chief Draftsman, Motive Power Dept., G.T.R.: Mr. Winterrowd speaks of the locomotive house foreman feeling that some parts of the locomotive should have been designed differently. I think the designer would be only too glad to receive and consider suggestions from the locomotive foremen.

Mr. Winterrowd also speaks about the many failures due to the crowding of the flues, due to placing them too close to the heel of the flue sheet. In our own practice we are cutting out the top row of tubes and bringing them down three or four inches.

He speaks also of the radius of mud ring corners. We have experienced trouble with the very large corners and have came down to the medium corners. We also had trouble with the small corners. The medium corners give the best satisfaction.

So far as the dome and throttle arrangement is concerned, I am afraid Mr. Winterrowd will have trouble in making these so that the men will have convenient access to these parts.

I agree with him in regard to the valve gear being on the outside, and in making the frames so we can use solid bracing and repair the bracing when it breaks.

I would like to ask Mr. Winterrowd a question in regard to the weakening groves cut in cylinder covers—whether he would make this applicable to all sizes of cylinders or only the large cylinders.

Piston valves are being reduced, and, as I understand it, will be materially reduced for the future.

I do not think Vanadium steel frames will give satisfaction for some time to come, although some of the other alloy steels, which are more expensive, might do so.

Some kind of ashpan could be designed which would do away with the swing doors, as the latter are not properly looked after and break off. Some kind of ashpan could be designed that would do away with the swing doors entirely and yet give ample air space.

W. C. Hunter, ex-Manager, New Brunswick Coal and Ry. Co.: There is one point that Mr. Winterrowd did not include, and which, if he will excuse me for mentioning it, might have been added in connection with locomotive brake cylinders. I would have suggested that mention be made of the necessity for fastening them to the frame with proper sized bolts. I noticed a locomotive recently with 14 in. brake cylinders held to the frame with ¾ in. bolts. That did not look to me like a job that was going to stay very long. I do not think there is any other point I will raise, but will leave the discussion to those who are more actively engaged in locomotive work than I am at present.

B. C. Gesner, salesman and expert, Galena-Signal Oil Co.: Mr. Winterrowd has covered the subject so thoroughly that there is not much room for discussion, but there is one point that I think might possibly be improved upon a little, and that is in relation to the piping. He says that air brake and steam piping should drain properly and contain no traps in which water can accumulate. I think there might also be included the piping from the lubricator to the cylinders, because the water will accumulate and it would be better if the piping could be so arranged that there will be a gradual descent from the lubricator.

G. M. Wilson, Master Mechanic, Montreal Shops, G.T.R.: I would like Mr. Winterrowd to give us an expression on the merit of frames, vanadium as against carbon steel frames.

T. Arnold: President, Taylor & Arnold, Ltd., Montreal: The lubricator choke plugs should be placed in prope rposition and as near to the cylinders as possible. I should like to know the exact location which Mr. Winterrowd considers the best. This is considered by the lubricator companies as being a very vital question, and a great deal of trouble has been experienced in deciding on an exact location for these choke plugs. The maintenance of these plugs is one of the biggest propositions that the lubricator companies have.

W. H. Winterrowd: The first point Mr. Sample raised had reference to the length of boiler flues. We all know that short flues are easier to maintain than long ones. The proper length of flues has been a question of considerable investigation, and, in 1916, the American Master Mechanics' Association committee on the design and maintenance of locomotive boilers stated in their report that a proportion of flue length to diameter of 100 times the inside diameter seemed most satisfactory. The tendency today is toward short flues, even when this has to be accomplished by means of a combustion chamber. While the evaporative capacity of a boiler may be increased by the use of long flues, the rate of evaporation per square foot of flue surface becomes less the longer the flue. If one couples to this the fact that firebox heating surface has an evaporative value about five or six times greater than flue heating surface, it is not difficult to understand the present day ratios of firebox to flue heating surface. Advantage is also taken of the higher temperature of flue gases, resulting from the shorter flues to obtain a higher degree of superheat.

I understand that the welding of flues to the back tube sheet is followed on a number of roads. The C.P.R. has not, at present a full set of flues welded to the back sheet. It has welded the large superheater flues, but has not welded other than in an experimental way, any of the small flues. I am unable to say just what results have been obtained in the way of decreased maintenance, resulting from welding full set of flues. Possibly someone present may have some information on the subject.

It would be interesting to know just what is required in the way of labor or special tools when renewing a full set of small flues, and also what steps are taken in the locomotive house to repair a defective weld to the flue sheet. I do know that considerable preparation is necessary prior to welding, one of the essential features being an absolutely clean flue sheet. If there is any oil or dirt on the sheet, the weld is not likely to be sound. I understand that some roads prepare the back sheet by sand blast, others with wire brushes. They all recognize the value of a clean flue sheet.

In connection with dump grates on large locomotives, it has been my experience that the quality of the coal is the governing feature rather than the size of the locomotive. Where coal is used that clinkers badly, a great deal of time can often be saved on the ash pit by means of dump grates. Does that answer your question, Mr. Sample?

W. H. Sample: The question is this: We have had at various times a good deal of discussion on the best location for the dump grate and whether or not it was wise to use it at all. After changing it to various locations, from the front to the back, and trying it in the centre, we always found we had a good many failures, and the only trouble we found without it was that which you speak of, when an inferior grade of coal is used it takes longer to clean the fires, but I do not believe we have as many tube failures as we had before. My object was to get the experience of someone else on this subject.

W. H. Winterrowd: On the C.P.R. there are not a great number of locomotives equipped with dump grates, but those which are equipped have the dump grate at the back and below the fire door. We have not had any trouble by these grates failing.

On the C.P.R. we have felt that particularly under our large power, where the frame stresses are high, that advantage could be obtained by the use of vanadium cast steel. We have obtained good results from these frames. In this connection, I would like to state that co-operation between the designer and the foundry is desirable. If frames are not designed so that they are free from final internal stresses, there is a possibility of failure.

The case hardening of motion parts is another thing that might have been mentioned in my paper. I tried to make it clear that owing to the large number of features comprising this subject, that those mentioned were but a small proportion of the total. It is our practice on the C.P.R. to case harden all motion parts.

I am really not in a position to say much about the drifting valve, as my ex-

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perience with it is limited. I am presuming that by drifting valve, you mean a valve, which, when the throttle is closed, admits a small amount of steam to the cylinders. The C.P.R. has some of these valves in service, but our experiments have not gone far enough for me to say anything definite regarding them.

Some roads prosser, others believe in rolling the flues. On the C.P.R. most of the flue expanding is done by the use of the roller.

In regard to the fit of the piston in the crosshead. Do you mean a filleted shoulder or the bottoming of the piston rod in the crosshead itself?

W. H. Sample: That is just the trouble. The shoulder is often drawn up too tight to the crosshead to keep the piston tight, and the result is a poorly fitted piston rod. It is a question if the shoulder should be there and whether we should not draw the piston up as far as it will go without the key.

W. H. Winterrowd: I am inclined to agree with you that if the shoulder is omitted a better fit could be made and easier inspection would be possible.

Mr. Powell raised the question regarding weakening grooves in cylinder covers. I believe that it is an advantage to apply the weakening groove regardless of the size of cylinder. My own experience has been that the cylinder covers of the large diameter cylinders fail oftener than those of the small cylinder. I believe this is due to the fact that our large locomotives are today doing the majority of the heavy work, and the smaller power is in branch line service, where the work is lighter. In any case, the weakening groove is likely to save an entire cylinder. Anything that will reduce the time and cost of repairs is desirable, regardless of the size of the locomotive.

Mr. Powell also mentioned the ash pan with swinging doors. I do not want to infer that I was recommending swing doors, but where these swing doors do exist, they can be so suspended that their own weight will tend to keep them closed and thus relieve the operating riggings of a certain amount of strain.

Jas. Powell: I had reference to the side doors without going to the opening underneath the foundation ring.

W. H. Winterrowd: I thought you were referring to the bottom doors. On the C.P.R. we do not use the side doors you mention, except on very small ash pans, where it is difficult to get proper air space.

The point that was mentioned regarding the proper fastening of brake cylinders is a good one and might well have been mentioned in the paper.

The question of traps in lubricator pipes was also raised. This is another point well taken, as it is extremely important that no traps exist in lubricator pipes.

The lubricator manufacturers advise that the choke plugs should be placed as near as possible to the steam chest or cylinder, keeping as short as possible any connection between the bottom of the choke or steam chest and cylinder. I have seen cases where choke plugs have been located directly on top of the steam chest, and in other cases have seen them located not far below the centre line of the smokebox. The question of maintenance is also important, as otherwise they will not function properly and trouble will result.

I believe that I have mentioned all of the points that have been raised. There is another question, however, that might have been mentioned in my paper, and that is the question of standards. It is not difficult to appreciate the economy that results from the use of standard parts. It not only means that less stock can be carried in stores, but also facilitates repairs. However, it might be well to consider just how far it is advantageous to carry out such a policy. Sometimes, where the type and size of locomotives may vary greatly, it may be more advantageous to break away from an existing standard and create a new one. The question of standardization is an important one and should be given the consideration that it merits.

W. H. Sample: In view of the extremely high cost of brass and copper today, I would like a little information on whether any trial has been made of other metals, such as Hunt Spiller metal for crosshead slippers, instead of brass. We have this question up just now.

W. H. Winterrowd: On the C.P.R. we used for a long time a brass slipper with babbit inserts, but several years ago began to experiment with the cast iron slipper with babbit inserts. The cast iron with the babbit inserts is practically our standard today, and is giving excellent service.

W. E. Barnes, District Master Mechanic, I.R.C., Moncton, N.B.: During the past year we have obtained a large number of heavy locomotives, and have found that while they are apparently well designed, we can only get from three to six months' wear from rod brasses.

W. H. Winterrowd: I am not prepared to say just what mileage we are getting from our rod bushes. The mileage will vary with the type and size of locomotive, the material from which the bushes are made, kind of lubrication and the class of service in which the locomotive is running. In general, the bearing pressure per square inch should be as low as is consistent with good practice. The maintenance of shoes and wedges may also have a direct bearing on the life of rod bushes.

W. E. Barnes: I think our lubrication is all right, and we have men especially assigned to maintenance work to keep the wedges properly adjusted, but with all that we have had excessive trouble with rod brasses. They do not seem to wear as well as the brasses on the smaller power.

W. H. Winterrowd: If you have not checked up the bearing pressures in bushes, it might be well to check them over.

G. M. Wilson: Coming back to the crosshead slipper—I would ask whether the slipper used on the C.P.R. is common grey iron or gun metal.

W. H. Winterrowd: Common grey iron.

Mr. MacNab: Has the C. P. R. ever used bakelite?

W. H. Winterrowd: Bakelite is a composition used in the manufacture of some switch bases and some switchboards. It is a very dense and hard composition. Some time ago we made some experiments with it and we are preparing to make some additional experiments.

W. E. Barnes: Has Mr. Winterrowd made any experiments with Vanadium steel rods. Some three years ago we obtained a number of them and not one has failed yet, while with the ordinary rod we have had a number of failures.

W. H. Winterrowd: On the C.P.R. we have used a number of vanadium steel rods and they have given excellent service. Today, however, the question of obtaining such steel is a very difficult matter and we have had to revert to the car-

bon steel rod where weight restrictions and other factors would permit.

Geo. Whiteley, Assistant Superintendent of Motive Power, C.P.R., Montreal: We had a little trouble with lubricators but we found it was our own fault, as we did not have the lubricator in the right place; also did not maintain the choke plugs. We found as soon as we got them down close to the steam chest and had them standing straight up, that they gave us no further trouble.

Godwin Shenton, Engineer, Taylor and Arnold, Ltd., Montreal: A hydrostatic lubricator at the most is only an oil regulator; that is, the lubricator itself feeds a definite amount of oil as regulated or set by the locomotive man, so that the question of locomotive lubrication largely depends upon the oil, or sometimes called "tallow pipes," and more, in fact, most important, the position and condition of the choke plugs. The choke plugs should be placed in an upright position, as close to the steam chest as possible, and be easy of access for inspection. It is most important that the hole in the choke plug should not be greater than 1/32 in. diam-This is of the greatest importance, and chokes should be inspected regularly and renewed as soon as excessive wear is noticed. Upon the choke plug depends the regular feeding of oil of a lubricator. Oil pipes must have a gradual and even downward slope to the steam chest. It is also essential to have the lubricator in a position in the cab where it can be easily seen and to a certain extent protected from the very severe winter weather.

The question of the amount of oil required for lubrication by a locomotive depends solely upon the work it is called upon to do, and no hard and fast rules can be laid down.

Suspension of Demurrage at Montreal. Early in November a press report stated that the Montreal Board of Trade had been advised that the Board of Railway Commissioners would issue an order immediately, giving export freight not covered by through bills of lading, the shipments of which is authorized by railway companies export permits, five days free time at Montreal, and a special demurrage toll of $1 a car for each day thereafter. We are officially advised that no order has been issued, but it has been arranged that no car demurrage be charged, during the current season of navigation, on South African, Australian and New Zealand traffic not covered by through bills of lading. The board will go into the question before the next navigation season.

Prince Edward Island Car Ferry.—The car ferry service between Port Borden, P.E.I., and Cape Tormentine, N.B., which was started Oct. 15, is being operated for the carriage of freight only. The passenger service between Point du Chene, N.B., and Summerside, P.E.I., and between Pictou, N.S., and Charlottetown, P.E.I., is being continued for the season of navigation. Up to the date of writing the time table and conditions for the water service had not been announced. During the week ended Oct. 27, there were transferred to the mainland 174 cars of potatoes and brought in from the main land 72 cars of mixed freight. (Nov. pg. 447.)

The C.P.R. observation cars, which were placed on the Austrian State Railways, in the Tyrol, in 1913, are said to be now in use as hospital cars in the Austrian service.

Freight and Passenger Traffic Notes.

The Canadian Northern Ry. opened a down town ticket office in Moose Jaw, Sask., Nov. 5, with A. G. deGuerre as city ticket agent.

The G. T. R. has transferred its General Agent, Passenger Department, in New York from 290 Broadway to 1270 Broadway, corner of 33rd St.

The Canadian Northern Ry. put in operation, Nov. 1, a daily train service, except Sundays, between Moose Jaw and Gravelbourg, Sask., 112 miles, replacing the previous mixed train service operated between Moose Jaw and Avonlea, and Avonlea and Gravelbourg.

The first export shipment of wheat from Vancouver B.C., to Europe via the Panama Canal was made recently. The 100,000 bushels were carried west from the prairie provinces to the Dominion Government elevator at Vancouver, from which it was transferred on shipboard on Nov. 8 and succeeding days.

The C.P.R. closed down on the receipt of freight for shipment via lake and rail route from eastern points as follows: Stations east of Megantic, Que., Nov. 22; stations east of Montreal to Quebec and Megantic, Nov. 26; and from stations Montreal and west to Windsor including branches, Nov. 30.

The Canadian Northern Ry. will have a daily passenger service between Toronto and Winnipeg during December, instead of the usual three days a week service. Train 1 will run daily from Toronto to Winnipeg, from Dec. 3 to Jan. 2; train 2 will run daily from Winnipeg to Toronto from Dec. 1 to Jan. 5.

Women are being engaged for ticket selling in city ticket offices of United States railways. One of the latest points where an appointment has been made is Durand, Mich., where F. N. Simpson, day ticket clerk, has been transferred to the position of night clerk, and has been succeeded as day clerk by his wife.

The Greater Winnipeg Water District railway time table was altered for the winter months, Nov. 16. The train leaves the old Canadian Northern Ry. station at St. Boniface, Man., at 8 a.m., Mondays, Wednesdays and Fridays, and leaves Waugh, for the return trip, at 7 a.m. Tuesdays, Thursdays and Saturdays.

The Board of Railway Commissioners has declined to make an order directing the G.T.R. to restore passenger service between Hamilton and Burlington across Burlington Beach. The line between these two points is a part of the old Hamilton and North Western Ry., and passenger traffic over it was dropped in 1901, owing largely to the opening up of the Hamilton Radial Ry.

The C. P. R. announces that the following time table has been received showing the current service between Yokohama, Japan, and Petrograd, Russia, via Vladivostock: Leave Yokohama via Japanese Ry., Monday 9.51 a.m., reach Maibara, Tuesday, 8.21 a.m., reach Tsuruga, Tuesday, 10.40 a.m.; leave Tsuruga via Russian Volunteer Fleet, Tuesday, 5 p.m., arrive Vladivostock, Thursday, 9 a.m.; leave Vladivostock, via Trans-Siberian Ry., Thursday, 10 p.m., arrive Harbin, Friday, 9.40 p.m., reaching Petrograd on the second Saturday at 9.55 p.m. Sleeping cars run between Yokohama and Trusuga, and there is also a sleeping car service on the Trans-Siberian Ry. Another route which may be followed is to leave Yokohama by Japanese Ry. at 9.08 a.m., Tuesday; arrive Shimonosaki, 9.38 a.m. on Wednesday; leave Shimonosaki by steamer 10.10 a.m. Wednesday, reach Chosan in Korea, 9.40 p.m. Wednesday; leave Chosan by railway 10.30 p.m. Wednesday, arrive Antung, Thursday, 6.20 p.m.; leave Antung by South Manchuria Ry., 6.51 p.m., Thursday; arrive Changchun, 9.30 a.m. Friday, leave Changchun by Chinese Eastern Ry. 11.02 a.m. Friday, arrive at Harbin 5.30 p.m., where connection is made with the Trans-Siberian Ry. train first mentioned. Sleeping cars are operated between Yokohama and Shimonosaki and between Chosan and Changchun.

United States Army Engineers' Work in the War.

The U. S. Engineers railway section has undertaken to transport, install and put into operation overseas a complete railway equipment. The railway problem in the theatre of operations in France involves not only the organization, equipment, and military training of railway troops for the construction, maintenance, and operation of standard and narrow gauge roads necessary for the supply of the U. S. armies, but also the purchase, inspection, and shipment of immense quantities of railway equipment—rails, ties, locomotives, cars, shop tools, etc.—necessary for the development of adequate port facilities, construction of new lines and their successful operation. The estimate of the situation in France was confirmed by the French commission, headed by Marshall Joffre, and the means of meeting it have been carried on with intensity.

Trained officials in various departments of American railways were called upon for the officers, and experienced railway employes for the enlisted men, of the nine railway regiments, each of 33 officers and approximately 1,100 men

The cost of materials ordered to date is approximately $70,000,000. including some hundreds of locomotives, more than 100,000 tons of steel rails, more than 3,000 complete turnouts, 500,000 ties, 12,000 freight cars, 600 fill and ballast cars, 600 miles of telephone wire and apparatus, as well as vast quantities of construction and repair equipment.

Since the U. S. declared war its enlisted engineering forces have been expanded from 2,100 to 95,000 men.

St. Paul Belt Line.—Diversion of through freight traffic around the City of St. Paul, Minn., is to be effected by the Twin City Belt Ry. The purpose is to keep local terminals and the new union station line clear of this traffic. The new line will thus facilitate the handling of passenger traffic and through and local freight traffic and relieve the congestion at this very large railway centre. The company is controlled jointly by the Great Northern, Northern Pacific and Chicago, Burlington & Quincy Railways, and the line will serve a number of the railways centring at St. Paul.

New Freight Terminal at Chicago.—A large freight terminal is to be built at Chicago by the Chicago, Burlington and Quincy Rd., as part of the extensive revision of the railway terminal system consequent upon the construction of the new union station. It will be located near Canal St., between Harrison and Polk Sts.

A board of conciliation has been appointed to deal with disputes between the Canadian Northern Ry. and its Western Lines maintenance of way employes. The board consists of Chief Justice Mathers, chairman; John Haig, for the company, and D. Campbell, for the men, all of Winnipeg.

Traffic Orders by Board of Railway Commissioners.

Transportation of Dangerous Articles.

General order 207. Oct. 26. Re general order 203, Aug. 11, 1917, authorizing regulations for transportation by freight of dangerous articles other than explosives, as amended by general order 206, Sept. 7, 1917; and the Canadian Manufacturers' Association application for a further order amending general order 203. It is ordered that general order 203 be further amended by striking out all the portion of clause (1) following the words "be struck out" in the fourth line, to the end of the clause.

Refrigerator Car Rates for Vegetables.

General order 208. Oct. 25. Re general order 152, Nov. 2, 1915, authorizing a scale of tolls chargeable by railway companies for use of refrigerator cars for carriage of vegetables, in carload lots; and general order 173, Oct. 26, 1916, rescinding general order 152, and re applications of railway companies for renewal of tolls authorized by general order 152 by a refiling of tariffs showing the said tolls; and the application of the Toronto Board of Trade that the railway companies be required to justify the said proposed tolls: It is ordered that general order 173 be rescinded in so far as it rescinds general order 152, and that the tolls for the use of refrigerator cars for the carriage of vegetables, provided by the said tariffs refiled and as authorized by general order 152, be allowed.

Canadian Freight Classification.

General order 209. Nov. 13. Re Supplement 10, consolidating and replacing previous supplements to Canadian Freight Classification 16. The railway companies having published and filed a consolidation of the various supplements to the Canadian Freight Classification, and its appearing to be beneficial to all parties, it is ordered that Supplement 10 to Canadian Freight Classification 16, cancelling and superseding supplements 1, 3, 4, 5, 6A, 7, 8, and 9, all of which were approved by the board, be approved.

All Rail Freight Rates from Eastern Canada to Western Points.

General order 210. Nov. 13. Re complaints of Winnipeg, Calgary, Regina, and Saskatoon Boards of Trade and Canadian Manufacturers' Association against tariffs C.R.C. 3 and 4, effective Sept. 1, 1917, filed on behalf of the railway companies by G. C. Ransom, agent, providing increased all rail freight rates from Eastern Canada to points west of and including Port Arthur; and applying for an order suspending the said tariffs: Upon hearing the applications at Calgary, Edmonton, Saskatoon, Regina, Winnipeg, and Fort William in October, the Boards of Trade of Calgary, Edmonton, Saskatoon, North Battleford, Regina, Moose Jaw, Winnipeg, and Fort William, the Canadian Pacific, Canadian Northern, Grand Trunk Pacific, and the Edmonton, Dunvegan & British Columbia Railway Companies, the Canadian Manufacturers' Association, the Calgary Board of Trade hardware section, the Retail Merchants' Association of Saskatchewan, the Saskatoon Wholesalers, the Province of Manitoba, and the Canadian Council of Agriculture being represented at the hearings. and upon the report of the Board's Chief Traffic Officer, it is ordered that the complaints be dismissed.

Switching Charged in Alberta and Saskatchewan.

26671. Oct. 22. Re complaints of Premier Coal Co., Alberta Block Coal Co. and Midland Collieries, against switching charges made by the Canadian Northern Ry. at Drumheller, Alta.: Upon hearing the complaint at Calgary, July 10, 1916, the Premier Coal Co. the Alberta Block Coal Co. and the Canadian Northern Ry. being represented at the hearing, and upon reading the further submissions filed; and it appearing that similar complaints from other parties at other points in Alberta and Saskatchewan have been made to the board, it is ordered that the tolls published and filed by the Canadian Northern, Canadian Pacific, and the Grand Trunk Pacific Railways for switching freight traffic on which the said companies, respectively, have received, or are to receive, a line haul—the said tolls being charged because the switch movement exceeds in distance 1,000 ft. be disallowed. allowed.

Protection of Perishable Freight by Artificial Heat.

26696. Oct. 30. Re complaints of General Brokerage Co., Regina Wholesalers' Association, Scott Fruit Co., Lloyd's Fruit Co., and the Boards of Trade of Edmonton, Saskatoon, and Weyburn, against clause 1, option 2, Supplement 10, to Transcontinental Freight Bureau Tariff, C.R.C. 350, providing that, owing to extremes in temperature, Canadian carriers will not guarantee protection of carload shipments of perishable freight in Western Canada by the use of artificial heat in transit, or while held on tracks. It is ordered that clauses 'h' and 'i', option 2, pg. 6, Supplement 10 to Transcontinental Freight Bureau Tariff 25-C, C.R.C. 350, relating to perishable freight in heated cars from points in Oregon, Washington, Idaho, and Montana to points in Western Canada, be suspended until further order.

Rates on Lumber from Sidney, B.C.

26718. Nov. 7. Re complaint of Board of Trade of Sidney, B.C., against increase by Great Northern Ry. of rates on lumber commodities from Sidney to destinations in Western Canada via New Westminster: It is ordered that the proposed cancellation by the Great Northern Ry. Company, by Supplement 9 to its tariff C.R.C. 1249, of the basing arbitrary of 2½c per 100 lb. to be added to its rates from Cloverdale, B.C., to make the through rates on lumber commodities from Sidney, to destinations in Western Canada via New Westminster, Hope, Fernie, or Nelson be suspended until further order.

Cars for Potatoes from New Brunswick.

26732. Nov. 13. Re application of New Brunswick Potato Exchange, under sec. 284 of the Railway Act, for an order requiring the C.P.R. to furnish cars suitably equipped for carrying potatoes from New Brunswick to Ontario and Quebec. Upon hearing the application at St. John, N.B., Nov. 9, 1916, in the presence of counsel for applicants and the C.P.R. and upon its appearing at the hearing that the railway company was remodelling its 79,000 series cars; and upon its further appearing that the railway company has converted insulated refrigerator cars into vegetable cars, making them available for the carriage of potatoes. It is ordered that the application be dismissed, this order to be without prejudice to any application made to the board in the event of the improvements made not adequately taking care of the situation.

Joint Rates to Edmonton, Dunvegan and British Columbia Ry. Territory.

26755. Nov. 17. Re application of the F. S. Newman Co., Ltd., of Winnipeg, for joint rates between the Canadian Pacific Grand Trunk Pacific, and Canadian Northern Railway, and stations on the Edmonton, Dunvegan and British Columbia Ry. Upon hearing the application at Winnipeg, Oct. 19, the applicant and the railway companies being represented at the hearing, it is ordered that the application be dismissed.

Railway Rolling Stock Notes.

The G.T.R. has received 6 Mikado locomotives, out of an order for 10, from Canadian Locomotive Co.

The Timiskaming & Northern Ontario Ry. is having superheater equipment applied to 8 of its 10-wheel locomotives by Canadian Locomotive Co.

The Eastern Car Co. has delivered, since Oct. 17, 300 box cars of 1,200 poods capacity, for the Russian Government, leaving 2,600 to be delivered on an order of 3,000.

The Northern New Brunswick and Seaboard Ry. has sold a locomotive and 60 ore cars, practically the whole of its rolling stock, to various concerns in Canada and the United States.

Canadian Government Railways have ordered 2,000 steel frame box cars of 40 tons capacity, from Canadian Car and Foundry Co.; and one 5 ton crane from General Equipment Co.

In order to move the grain crop along the Edmonton, Dunvegan & British Columbia Ry. a number of locomotives are said to have been taken from the Hudson Bay Railway under construction by the Dominion Government.

The C.P.R. has received the following additions to rolling stock from its Angus shops, since Oct. 17: 7 express refrigerator cars, 181 freight refrigerator cars, and 5 steel mail cars 60 ft. long; and from its Winnipeg shops, 2 vans.

Canadian Government Railways have received the following additions to rolling stock, since Oct. 17: 25 refrigerator cars from Canadian Car and Foundry Co.; 2 second hand locomotives, 69 second hand coal cars 30 tons capacity, 7 second hand coal cars 35 tons capacity, 6 second hand coal cars 40 tons capacity, and 9 second hand box cars 30 tons capacity, from General Equipment Co.; 1 second hand flat car from Maritime Bridge Co., 1 store car and 6 baggage cars from Hotchkiss Blue and Co.

Esquimalt & Nanaimo Ry. Land Claims. —Judgment was given Nov. 1 in a British Columbia court in the action brought by the E. & N. R. to restrain Alexander McLellan and others from prospecting on lands in the Chemainus land district of Vancouver Island. The defendants were prospecting for minerals under the provisions of a crown grant, and the railway claimed that the land on which they were working had already been granted to it. The defendants contended that the action could not be maintained without the intervention of the Attorney General, but the judge in giving judgment for the railway company said that this had not been clearly shown. Looking at the merits of the case the judge said it would appear that the government gave a lease of lands to the defendants which it did not own, such lands having already been granted to the E. & N. R.

Dismantling Bridges on Old Rogers Pass Line, C.P.R.

In the article on salvaging the C.P.R.'s old line at Rogers Pass, on page 458 of this issue, it is stated that the bridges will be taken out by another contractor, probably during the year. Since that article was printed we have been officially advised that the Hamilton Bridge Co. has been given a contract for dismantling the bridges, all of which are deck plate girders. The mileages mentioned are those on the old and now abandoned line.

Mileage 89.65, first crossing Five Mile Creek (Loop Brook), three 80-ft. and one 30-ft. d.p.g.

Mileage 90, second crossing, Five Mile Creek (Loop Brook), six 90-ft. and one 60-ft, d.p.g.

Mileage 90.45, first crossing Illecillewaet River, two 60-ft. and one 100 ft. d.p.g.

Mileage 90.82, second crossing Illecillewaet River, two 50-ft. and one 80 ft. d.p.g.

Mileage 90.93. third crossing, Five Mile Creek (Loop Brook), one 80-ft. d.p.g.

Grain Inspection at Western Points.

The following figures, compiled by the Trade and Commerce Department's inspection branch, show the number of cars of grain inspected on railways at Winnipeg and other points on the Western Division, for October, and for two months ended Oct. 31, compared with the same period in 1916.

	Oct.	2 mths. to Oct. 31,'17	2 mths. to Oct. 31,'16
C.P.R., Calgary	20,172	29,866	27,122
C.N.R.	8,402	15,021	15,056
G.N.R., Duluth	213	409	410
G.T.P.R.	5,064	6,961	4,475
Totals	33,851	52,357	47,924

Railway Lands Patented.—Letters patent were issued during September in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta, and British Columbia as follows:

	Acres.
Canadian Northern Ry.	18.245
Edmonton, Dunvegan & British Columbia Ry.	349.74
Grand Trunk Pacific Ry.	9.74
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.	805.00
Total	1,182,725

The Electric Railway Investigation in British Columbia.

The report of Adam Shortt of Ottawa who was appointed, following the strike of British Columbia Electric Ry. employes in July, to make an investigation into the whole transportation situation in the territory served by the company, was made public Nov. 19. He states that in Victoria and Vancouver, and between Vancouver and New Westminster, jitney traffic should cease to operate on routes where the electric railway operates; recommends that there be no change of fares in the city areas but that transfers be not granted as between city and interurban cars; that one-man cars be operated as far as possible in all outlying districts; that the skip-stop system be worked on interurban lines, and that there be a higher speed limit in the city. The report also deals with the company's electric light and power franchises. The commissioner finally recommends that a Public Utilities Commission be created for the province.

Quebec Railway, Light, Heat, and Power Co's Appointments.

The following appointments have been made, with offices at Quebec:

E. G. GIASSON has been appointed Auditor of Freight and Passenger Receipts.

J. A. FORGET has been appointed Freight Claim Agent.

All electrical apparatus on locomotives and cars is under the charge of P. QUINN of the City Division.

E. LAPLANTE has been appointed General Locomotive Foreman, in charge of the Montmorency Falls shops, and wherever locomotives and machinery are located.

E. PLAMONDON has been appointed General Car Foreman in charge of the Ste. Anne shops, including stores and material, and of car inspectors wherever located on the Montmorency Division.

London and Lake Erie Ry. and Transportation Co.'s Position.—We are advised that up to Nov. 21, nothing definite had resulted from the negotiations for the disposal of this railway, either in whole or in part to the municipalities through which it runs. A London, Ont., press report Nov. 22, says it is realized that it is next to a hopeless proposition to ask the ratepayers of the municipalities concerned to vote the money required to keep the line running, and that the selling of the rails and other materials might be the best way of disposing of the property, considering the present state of the metal market. (Nov., pg. 444.)

A bonding bylaw for jitneys in Winnipeg went into operation, Oct. 1. The jitney men finally decided to drop the mutual bonding scheme, which the city had approved on condition that a cash deposit of $10,000 be maintained, in favor of a surety company's bond at $130 a year. By Oct. 4 bonds had been taken out by 275 jitney men. It is expected that the bylaw will drive transients and inefficients out of business and bring about an improvement of the service.

The Levis County Ry. is reconstructing 800 ft. of track on Fraser Hill, Levis. It is in the market for 50 tons of 80 or 85 lb. steel rails with angle bars, G. C. R. drilling, for next year, in connection with paving to be done by the city.

Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ended Nov. 9,—	Wheat. bushels.	Oats. bushels.	Barley. bushels.	Flax. bushels.	Totals. bushels.
Fort William—					
C.P.R.	819,585	316,654	131,817	.....	1,278,056
Consolidated Elevator Co.	488,276	188,987	37,025	53,545	767,833
Empire Elevator Co.	328,357	367,728	57,056	9,399	762,540
Ogilvie Flour Mills Co.	643,656	75,507	32,978	.....	752,141
Western Terminal Elevator Co.	749,614	119,330	3,068	58,019	930,031
G.T. Pacific	841,252	1,293,195	52,625	22,106	2,209,078
Grain Growers' Grain Co.	372,697	558,600	56,986	.....	988,283
Fort William Elevator Co.	255,779	286,844	42,322	37,827	622,772
Eastern Terminal Elevator Co.	349,947	88,707	18,386	.....	457,040
Port Arthur—					
Port Arthur Elevator Co.	851,866	587,254	377,726	41,779	1,858,625
D. Horn & Co.	73,072	98,392	15,167	60,553	247,184
Dominion Government Elevator	783,431	323,949	51,828	88,866	1,248,074
Thunder Bay	371,601	170,072	63,111	24,194	628,878
Davidson & Smith	258,980	22,396	58,973	.....	340,349
Total Terminal Elevators	7,188,113	4,497,615	1,009,068	396,088	13,090,884
Saskatoon Dom. Govt. Elevator	4,324	149,281	.....	.....	153,605
Moose Jaw Dom. Govt. Elevator	88,507	74,851	641	1,524	165,523
Calgary Dom. Govt. Elevator	131,358	104,629	2,072	516	238,575
Vancouver Dom. Govt. Elevator	103,316	4,055	210	.....	107,581
Total Interior Terminal Elevators..	327,505	332,816	2,923	2,040	665,284
Depot Harbor	192,347	.....	.....	.....	192,347
Midland—					
Aberdeen Elevator Co.	756,242	.....	.....	.....	756,242
Midland Elevator Co.	142,426	42,200	.....	.....	191,626
Tiffin, G.T.P.	1,156,229	1,430	.....	.....	1,157,659
Port McNicol	2,868,249	62,467	.....	.....	2,748,716
Collingwood	.....	.....	.....	.....	.....
Goderich Elevator and Transi	644,203	121,345	.....	6,938	772,486
Western Canada Flour Mills Co., Ltd..	440,555	.....	.....	.....	440,555
Kingston—					
Montreal Transportation Co.	557,477	.....	.....	.....	557,477
Commercial Elevator Co.	.....	.....	.....	.....	.....
Port Colborne	1,096,771	.....	.....	.....	1,096,771
Prescott	.....	.....	.....	.....	.....
Montreal—					
Harbor Commissioners No. 1	719,198	77,779	169,065	.....	966,042
Harbor Commissioners No. 2	1,618,149	48,699	57,290	.....	1,724,138
Montreal Warehousing Co.	1,601,604	62,579	363,319	28,341	1,955,843
Quebec Harbor Commissioners	1,855	16,465	.....	.....	18,320
West St. John, N.B.	554,769	9,706	.....	.....	564,475
Halifax, N.S.	32,076	.....	.....	.....	32,076
Total Public Elevators	12,200,150	449,670	489,674	35,279	13,174,773
Total quantity in store	19,715,768	5,280,101	1,501,665	433,407	26,930,941

Receipts and shipments of the different kinds of grain at Fort William and Port Arthur during two months ended Oct. 31, 1917.

RECEIPTS.					
September	12,062,125	414,147	596,291	49,407	15,168	13,137,038
October	31,401,473	2,933,796	1,207,671	288,637	53,854	35,925,431
Total	32,463,498	3,347,943	1,843,962	388,044	69,022	49,062,469
SHIPMENTS.					
September, Lake	6,511,467	396,634	92,793	129,710	7,130,604
Rail	686,904	745,595	79,821	34,236	1,546,556
October, Lake	33,455,518	556,658	671,052	142,214	34,825,742
Rail	585,070	1,257,336	135,412	29,174	2,006,992
Total, Lake	39,967,285	953,292	763,845	271,924	41,956,346
Rail	1,271,974	2,002,931	215,233	63,410	3,533,548

Electric Railway Department

Engineers' Report on Proposed Hydro Electric Railway from Port Credit to St. Catharines.

Some months ago a committee of Hamilton citizens requested the Canadian Society of Civil Engineers' Toronto branch, to name a board of engineers to report on the Hydro Electric Power Commission of Ontario's proposal for building an electric railway from Port Credit to St. Catharines, towards the cost of which the City of Hamilton was asked to issue debentures for $5,689,386. The board appointed consisted of five members of the Canadian Society of Civil Engineers, R. W. Leonard, St Catharines; Sir John Kennedy, Consulting Engineer, Montreal Harbor Commission; W. F. Tye, Consulting Engineer; L. A. Herdt, Professor, Electrical Engineering, McGill University and W. J. Francis, of Montreal. Their report was submitted recently, accompanied by a letter signed by R. W. Leonard, as chairman, and W. J. Francis as secretary, as follows:

"On behalf of the board of engineers appointed by your committee to report upon the proposition of constructing and operating a hydro electric radial railway from Port Credit to St. Catharines, we take pleasure in enclosing herewith the report on the question. The board has been unanimous in its findings in regard to the specific features named in your letter of instructions, and in its conclusion.

"The estimates of capital cost, as given by the Hydro-Electric Power Commission, have been used by the board, in accordance with the letter of instructions, but the board does not endorse the estimates of capital cost in any way, as the Hydro-Electric Power Commission declined to give the information necessary whereby they could be checked.

"For your convenience we are here briefly stating the substance of the report. The first specific feature in the letter is the determination of the public necessity for the proposed Port Credit-St. Catharines line. Your board finds that no public necessity exists for the construction of the proposed line, because the particular district is thoroughly well provided with steam, electric and water transportation facilities; because the province of which the district forms a part is also amply provided with transportation facilities; and because the number of transportation companies already operating in the district makes it quite unnecessary to inaugurate a new and distinct system. This phase of the question is more particularly referred to in the report.

"Operating revenue, fixed charges and operating expenses and extension to the frontier. The second, third and fourth specific features in the letter refer to financial matters. A request is made for the estimated operating revenue based on the conditions in the territory to be served by the proposed lines; the estimated cost as stated by the commission, $11,360,363; and an estimate of the cost of the construction of a proposed extension from St. Catharines to the Niagara frontier, coupled with an estimate of the earnings probable on through traffic obtainable at the frontier when such an extension shall have been made. Your board estimates that the financial statement of the proposed line under local traffic conditions will be as follows:

"Revenue from operation, 59.6 miles, at $6,000 a mile	$357,600
"Operating expenses, 61% of $357,600..	218,136
"Net operating revenue	$139,464
Fixed charges:	
"Interest on $11,360,363 (as given by Hydro-Electric Power Commission), at 5½%	$624,820
"Yearly deficit, exclusive of taxes and sinking fund	$485,356

"(Sinking fund is not chargeable during the first ten years.)

"Your board further estimates that the financial statement of the proposed line under all traffic conditions, will be as follows after 10 years:

"Revenue from operation, 59.6 miles, at $16,000 a mile	$953,600
"Operating expenses, 65 %of $953,600 ..	619,840
"Net operating revenue	$333,760
"Fixed charges:	
"Interest on $11,360,362 (as given by Hydro-Electric Power Commission), at 5½%	$624,820
"Sinking fund, at 1%	113,604
	$738,424
"Yearly deficit, exclusive of taxes	$404,664

"The cost of an extension to the frontier has been estimated at about $2,280,000, arrived at from a consideration of the figures given by the commission for the line from Port Credit to St. Catharines. This phase of the question is more particularly referred to in the report.

"The letter of instructions makes the fifth specific feature perfectly general in its nature. It requests the submission of pertinent information developed in the study of the question. The effect of good roads on transportation questions generally is of great importance. Your board finds that it would be much more in the interest of Hamilton if good roads were seriously taken up, rather than the proposed Port Credit-St. Catharines line. The amount proposed to be expended on the proposed line would build at least 800 miles of good roads in the Hamilton district.

"The information regarding terminal facilities is so indeterminate that your board has not been able to satisfy itself regarding the obligation of the City of Hamilton in connection with the essential terminal expenditures and costs. The system of financing and apportionment of losses or profits, being entirely arbitrary, and not within the control of Hamilton, is sure to cause dissatisfaction.

"The proposed bylaw and agreement are vague and indefinite in many particulars. By them the city of Hamilton would become responsible for nearly $6,000,000 and would start into the railway business from which it would have practically no opportunity to withdraw, and over the operation of which it would have no control. One of the parties to the agreement would have entire control, without any responsibility, financial or otherwise, while the other party would have no control, and would be, at the same time, responsible to the last dollar. The agreement would prevent Hamilton from entering into any arrangement with any transportation company without the consent of the Hydro Electric Power Commission. The city could be required to give a free right of way over any corporation property. The apportionment of losses or profits has not been definitely stated. The question of assistance in operating the line under avoidable and uncontrollable circumstances is not fairly stated. The agreement would require the city to give the proposed railway practically exclusive interests. The renewal clause makes the agreement virtually a perpetual one. No audit is provided for. The agreement as a whole is indeterminate and obscure, although it is definitely stated that the municipalities shall bear all losses in operation, while the Hydro Electric Power Commission is definitely relieved from any and every responsibility, at the same time having the final and binding decision in all matters. Generally, Hamilton would be placing itself entirely in the hands of the commission over which, by the terms of the proposed agreement, it would have absolutely no control or authority. The board considers this a very important matter, as the city is called upon by the proposed agreement to guarantee over half the cost of the proposed line.

"Your board has reached the unanimous conclusion that it is not in the interest of Hamilton to enter into the proposed agreement. For a full discussion of the project we would respectfully refer you to the text of the report. On behalf of the board we desire to express our sincere appreciation of the many courtesies shown to the board and to its assistants, not only by yourself and the members of the citizens' committee, but also by very many others."

The full report states that the Hydro Electric Power Commission declined to furnish any information to the board of engineers, and that Sir William Hearst, Premier of Ontario, was unsuccessfully appealed to. In his reply, the Premier called attention to the fact that the commission objected to the personnel of the board of engineers, claiming that R. W. Leonard was not an electrical engineer, and that he had strongly expressed himself as being averse to the hydro radial scheme. The commission felt an injustice would be done the cause if data and material were handed over to a board of engineers nominally appointed by E. W. Oliver, Assistant Engineer, Canadian Northern Ry.; E. G. Hewson, Division Engineer, Grand Trunk Ry., and three other members of the executive of the Toronto branch. Later, in reply to a query of the engineers, Sir Adam Beck stated that the board might make an appointment with F. A. Gaby, Chief Engineer of the commission, to inspect the material referred to. This appointment was arranged, but Mr. Gaby declined to permit any inspection, and though numerous letters were written by the board of engineers, they got no satisfaction from the hydro authorities.

The American Electric Railway Association has appointed a war board, on lines similar to those adopted by the steam railways. The headquarters are in Washington, D.C., and the board will work in close connection with the Council of National Defence.

The Regina Municipal Railway's Operations.

By D. W. Houston, Superintendent.

The Regina Municipal Ry. has been in operation since July, 1911, a period of over six years. During this time the average daily car miles run has increased from 200 to 2,700, and the number of cars operated from 4 to 21. At present a service is given to all parts of the city, the general layout being radial, all lines running on Eleventh Ave., between Scarth and Broad Sts., and from this branching out into the different settled districts of the city. Four lines are being operated, as follows:

Broad and Dewdney (Red Line) serves Camp Exhibition, Grey Nuns' Hospital, Government House and the Mounted Police barracks in the west end, and the General Hospital, Normal School and St. Chad's Hospital in the southeast portion of the city.

Winnipeg and Thirteenth (Blue Line) serves all the portion of the city west of Albert St., between the C.P.R. tracks and Sixteenth Ave., and the northeast portion including the Imperial Oil Co. plant, also the C.P.R. station.

North Broad and Parliament Buildings (White Line) serves the Collegiate Institute, Regina College, G.T.P.R. station, Wascana Park and the Parliament Building in the south end, and the C.P.R. station and wholesale districts contiguous to Broad St. in the north end, including Simpson's warehouse.

Victoria and Fifth (Green-Red Line) serves the northwest portion of the city, including the street railway car barns and office and the G.T.P.R. shops; in the east end service is given to the Earl Grey Hospital, the Children's Home and all the portion of the city contiguous to Eleventh Ave., east of Broad St. and Eleventh Ave., east of Winnipeg St.

During August and September last the average number of passengers carried on each line daily was as follows: Red Line, 3,370; White Line, 2,004; Blue Line, 2,967; Green-Red Line, 3,144; total, 11,485. The average is considerably higher during the winter, but the proportion carried on the different lines is about the same. Taking the corner of Eleventh Ave. and Scarth St. as a centre, the traffic to and from points west of this is much greater than that to and from points east. On account of the large proportion of the city's population living within reasonable walking distance of this centre, there is considerable variation between summer and winter patronage. As in other cities, this is also affected by the largely increased use of automobiles.

Passenger revenue is slightly augmented by that derived from carrying policemen and postal carriers, the former at a flat charge of $30 a man per year, and the latter at $35 a man per year. There is also a certain amount of revenue derived from special cars and the sale of advertising spaces in the cars.

In addition to passenger service, the street railway operates a freight service. The main commodities handled are coal and garbage. Coal for the city power house is hauled in steam railway cars about 1 1/5 miles from the C.P.R. Arcola line. The track over which the coal cars are hauled is on Atkinson St. and is used exclusively for this purpose. Garbage is hauled in special steel dump cars from the city transfer station (just east of the car barns) to the city incinerator, a short distance west of the city limits on Wascana Creek. This material is gathered up throughout the city by wagons and sorted and loaded at the transfer station.

The rolling stock consists of: 18 passenger cars, double truck; 16 passenger cars, single truck; 1 snow sweeper, double truck; 1 snow sweeper, single truck; 1 snow plough, single truck; 1 motor haulage car, double truck; 5 flat cars, single truck; 6 wood dump cars, single truck; 18 steel dump cars, single truck.

Report of Conciliation Board re Ottawa Electric Railway.

A board of conciliation and investigation was appointed by the Labor Minister recently in connection with differences between the Ottawa Electric Ry. Co. and its employes. Following are extracts from the report:

The matters in dispute were in relation to certain alleged violations by the company of provisions of the agreement entered into with the men on July 10. We found that there was no real difference between the company and the men. Misunderstandings had arisen, as a result of a failure to come together for complete discussion such as we were able to bring about, and as a result the misunderstandings have disappeared and mutual assurances have been given which are practically certain to result in harmonious operation in the future.

The principle was asserted that the men have the right to nominate the members of their grievance committee as they think proper, and this principle is to be recognized by the company. Certain minor difficulties were due to a failure in the past to recognize this principle, but we are satisfied the probability of a recurrence of similar difficulties is slight.

One objection of the men was based upon the fact that an employe had been dismissed without an opportunity being given to the grievance committee to consider his case. This again appeared to have been the result of a misunderstanding and the acting Superintendent has promised to reinstate this employe, in the hope that the difficulty will not occur again.

Another minor difficulty had arisen owing to the company's failure to supply seats for conductors in certain cars. This also appeared to have been an oversight and the company has promised to remedy it within a time satisfactory to the men.

The third minor difficulty was the failure of the company to supply boards in the pits in the sheds as provided by the agreement. It appears that this was because of an objection raised by the insurance underwriters, and the men have recognized the justness of the company's position in this regard and do not intend to press for compliance with that term of the agreement.

Certain instances were mentioned of changes in the shop rules without previous consultation with the grievance committee. These matters were explained to the men's satisfaction and on the board's recommendation care will be taken in the future not to give rise to similar complaints.

The International Transit Co.'s Car men at Sault Ste. Marie, Ont., went on strike for a few hours late in September, demanding an increase of 5c an hour, thir wages then being a minimum of 27c an hour, with a maximum of 32 cents. A board of conciliation early in November recommended the following scale: 1st 6 months, 30c; 2nd 6 months, 31c; 2nd year, 32c; 3rd year, 33c; thereafter 35c.

A Vancouver Paper's Views on Street Railway Necessities.

The Vancouver Daily Sun published a long article recently on the development of street railways, from which the following is reproduced:

"Heavier cars, heavier tracks, more safety devices, more convenient service in rush hours, on holidays and on special occasions—all these have been drawing upon the enterprise and ingenuity of electric railway companies until it seemed as if the end had to come. . . . Together with this increase in the investment in better equipment has come a rise in the cost of operation, due to the increase in the cost of labor and materials. With the fixed 5c fare, street railways have been hit especially hard, and harder, they say, than the purveyor of any other commodity, who has been allowed to increase the price of his produce as the cost requires.

"Unfortunately for many street railways, franchises entered into 20 and 30 years ago did not make provision for changing conditions. Again, being a public institution, street railways have been put under further regulation by public service commissions. So that while on the one hand costs have been increasing, the street railways have had their fares fixed by someone else. A new spirit is springing up in the control of street railways, however, one that may be expected to overcome the difficulties of modern life and again send city transportation forward to meet the needs of the public. Commissions are realizing that it is in the public interest that street railways should have obstacles to their progress removed. In other words, while they have regulated them as regards fares and service for the public good, they have also co-operated with them to enable them to give service to the public. For instance, commissions have agreed throughout to the fundamental necessity from the public's point of view of allowing a company to make a fair return on the investment, because should it be prevented from doing so, the service the public would receive would inevitably deteriorate. They have even taken the same broad minded stand on the question of fares, which have been fixed by franchises. In some cases, street railways have themselves contracted to charge only a certain fare, but a few years later found that they could not maintain the service and pay a fair return on the investment. The commissions have taken the stand that a company cannot be expected to give service below cost, even if it were stipulated in the franchise, and have authorized increases in fares accordingly. The spirit of co-operation has taken the place of antagonism. City transportation is such a vital factor in modern life that it is realized that the shoulder of everyone should be at the wheel if the best results are to be obtained."

One-Man Cars for Saskatchewan.—T. H. McCauley, Superintendent Calgary Municipal Ry., while on his way east on business recently visited Regina, Sask., and gave information to the Saskatchewan Government, respecting the operation of one-man cars, supporting a delegation representing Regina, Saskatoon, and Moose Jaw city councils, which asked the government to bring in an amendment to the Railway Act, to authorize the operation of cars with one man in charge instead of two.

Electric Railway Notes.

The British Columbia Electric Ry. has made claims for exemption of twelve of its employes, under the Military Service Act.

The British Columbia Electric Ry. is said to be considering putting one-man cars in operation on some lines in Vancouver, New Westminster and Victoria.

The Edmonton, Alta., City Council, has let a contract to J. L. Tipp, for supplying 100 overcoats for the employes of the Edmonton Radial Ry. at $30 each.

The Edmonton, Alta., City Council is reported to have placed an order in the U. S. for 80 new car wheels for Edmonton Radial Ry., at a cost of $4,060.

The Niagara St. Catharines & Toronto Ry. has, at the Niagara Falls, Ont., City Council's request, put near sidestops into effect on its entire local line there.

The Edmonton, Alta., Radial Ry. has provided a waiting room and shelter for passengers on the low level route, at the north end of the low level bridge.

Toronto Works Commissioner has reported against allowing advertising on the outside of Toronto Civic Ry. cars, contending that the disfigurement of the cars would not be justified by the returns.

One-man cars are being operated on every one of the routes on the Calgary, Alta. Municipal Ry., the Ogden route being the last one upon which these cars were placed.

The British Columbia Electric Ry.'s total taxation for the current year for its entire system, including city, municipal and government taxes and percentages is $249,056.24.

E. P. Coleman, General Manager, Hamilton St. Ry., is reported as having stated Nov. 9, that the company was considering the desirability of putting a number of p.a.y..e. cars in operation on certain of the city lines.

The Lake Erie and Northern Ry. was notified by the Galt, Ont., City Council recently that it would have to cease operating its cars on Water St., in that city, by Dec. 1, unless in the meantime an agreement as to terms was signed.

Nineteen persons were treated in hospitals and a number of others in an adjoining police station on Nov. 7, as the result of a Montreal Tramways Co. car leaving the rails at the corner of Seigneurs and Notre Dame Sts. and colliding with the Merchants Bank building.

The Kitchener, Ont., Railway Commission has notified its employes that starting from Jan. 1, 1918, an increase of 7½ cents an hour will be made in the pay of motor men and conductors, and that employes of one year standing and upward will be given a week holiday with pay each year.

The Calgary Municipal Ry. is having six cars specially fitted up for use as one-man cars during the rush hours only, and to run on certain routes between terminals without intermediate stops. The door in the rear is being closed, the entrance, as well as the exit, being via the front platform.

The Shawinigan Water and Power Co. is applying to the Quebec Legislature for confirmation of all issues of debenture stock heretofore made by the company, to amend and extend the company's borrowing powers, and its rights to issue bonds, debentures, or other securities, and for other purposes.

At a meeting of the Northside Ratepayers' Association at Regina, Sask., Nov. 2, the Regina Municipal Ry. management was criticized. Alderman England invited the critics to place their charges in writing and pointed out that if this was done a thorough investigation would be made.

The British Columbia Electric Ry. has decided to sell rather than give free use of street car fenders for advertising purposes. In the past, the company has been glad to offer this space freely for patriotic and charitable advertisements, but such have been the increases in the company's expenses that new sources of revenue had to be developed.

The Moose Jaw, Sask., City Council passed a resolution recently stating that no obstacle would be placed in the way of the operation of one-man cars on the Moose Jaw Electric Ry. so long as the company maintained an adequate service. The resolution was opposed by the labor member on the council.

The Ottawa Electric Ry. put the winter car schedule in operation on the Britannia line Nov. 12. A four minute schedule is given from the corner of Elgin and Spark Sts. to the McKellar townsite loop, with a two minute service during the rush hours; while a 10 minute service is given from the McKellar townsite to Britannia.

The hearing of the evidence and arguments in the difference between the Edmonton Radial Ry. and its employes by the Board of Conciliation, were brought to a sudden stop, Oct. 31, when the city obtained an injunction restraining the board from taking further proceedings. On Nov. 2, Justice McCarthy was appointed by the Minister of Labor as Royal Commissioner to act in the matter.

The electrolysis of water pipes in Winnipeg was again brought before the city board of control recently by the Superintendent of the Water Works, who reported that the measures now applied by the Winnipeg Electric Ry. are strictly limited to the districts supplied by their substations only, leaving four others to be dealt with, including the most important of all, namely, Mill St.

Sandwich, Windsor and Amherstburg Ry. employes were out on strike recently for nine hours because a non-union man, who, on the half-yearly distribution of runs, had selected a night run, desired a change to a day run and was refused by the Superintendent; he then went to the Manager, who directed the change to be made. The employes protested and subsequently went out. The mayor intervened, and the matter was adjusted.

The Edmonton, Alta., Municipal Ry. management is considering the question of the transportation of the fire brigade and policemen on the cars and has been getting information from other places. The Lethbridge, Alta., City Council gives municipal employes the privilege of buying 25 street car tickets for $1; while in Calgary, the fire department pays the municipal railway $250 a year for members of the fire brigade, and the railway department permits policemen in uniform to ride free, charging them the ordinary fare when out of uniform.

The Saskatchewan labor organizations' executive committee has under consideration the question of the position which should be taken in regard to the proposal to operate one-man cars on electric railways in the province. When the railway act was passed by the legislature the labor party secured the insertion of a clause providing that there should be a motorman and a conductor on each car. In order to permit the operation of one-man cars the legislature is being asked to repeal this clause. It is expected that the organizations will pass a resolution, of which notice has been given, protesting against repealing the clause.

Mainly About Electric Railway People.

Wilford Phillips was presented with a gold watch and chain, and Mrs. Phillips with a travelling bag, by Winnipeg Electric Ry. employes on his retirement from the position of General Manager.

A. W. McLimont, the new General Manager of the Winnipeg Electric Ry., has been elected an honorary member of its Old Timers' Association, which is composed of employes who have been in the company's service for 10 years or more.

W. S. Hart, heretofore Secretary-Treasurer, Three Rivers Traction Co., has been appointed Managing Director. **James Wilson**, heretofore Assistant Secretary-Treasurer, has been appointed Secretary-Treasurer.

A. E. B. Hill, of the British Columbia Electric Ry.'s Signalling Staff, was presented with a silver loving cup by the office staff at Vancouver, Nov. 9, on retiring after ten years service. The presentation was made by G. Kidd, General Manager.

Maurice McCormick, heretofore Assistant General Manager and Purchasing Agent, Bangor Ry. & Electric Co., Bangor, Me., has been appointed Assistant to General Manager, New Brunswick Power Co., St. John, N.B., which owns and operates the St. John Ry.

F. M. Black has resigned his position as a member of the Alberta Public Utilities Commission, on his appointment to a position under the Food Controller. The Alberta Government is reported to have decided to postpone indefinitely the filling of the vacancy.

W. Douse, heretofore of the Hydro Electric Power Commission of Ontario's purchasing office, has been appointed acting Purchasing Agent, Toronto & York Radial Ry., Toronto, **G. K. Hyde**, Purchasing Agent, having, on account of ill health, been granted six months leave of absence, which he will spend in the south.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver, B.C., visited Calgary, Alta., Oct. 25, in company with Inspector Rae, of the Department of Railways of British Columbia, to inspect the working of one-man cars on the Calgary Municipal Ry. They were on their way home from visiting a number of United States cities, where one-man cars are being operated.

J. T. Donohue, who was added to the Quebec Railway, Light, Heat and Power Co.'s board at the recent annual meeting is President of the Nairn Falls Power & Pulp Co., Murray Bay, Que. Before the erection of the Quebec bridge commenced he was President of the Eastern Steel Co. of Canada, which was sold to the contractors for that structure. He is also President of the Donohue Construction Co. of Quebec.

Mathew W. Kirkwood, whose appointment as General Manager, Galt, Preston and Hespeler St. Ry., and Lake Erie and Northern Ry., Galt, Ont., together with

his portrait, appeared in our last issue, was born at Cheltenham, Ont., June 8, 1877, and entered G. P. & H. S. R. service in Dec. 1894, since when he has been, to Sept, 1895, general helper in repair shops, Preston, Ont.; Sept. 1895 to Oct. 1907, Master Mechanic and Electrician in charge of rolling stock and equipment, Preston, Ont.; Sept. 1895 to Oct. 1907, Superintendent and Master Mechanic, Preston, Ont. In addition to the last named position, he was from Feb. 1915, to Feb. 1916, Electrical Engineer, Lake Erie and Northern Ry., in charge of construction and equipment, and from Feb. 1916 to Sept. 1, 1917, Superintendent.

Electric Locomotives for Hydro Electric Power Commission of Ontario Construction Railway.

The Hydro Electric Power Commission of Ontario is having built twelve 50-electric locomotives for hauling trains on the construction railway which it is building in connection with its power development at Chippewa Creek, near Niagara Falls and which will have 600 volt, d.c. operation. Their general dimensions are as follows:

Length over end sills	35 ft.
Length over striking plate	36 ft.
Length of truck centres	19 ft.
Length of main cab	10 ft.
Length of auxiliary cab	9½ ft.
Width over side sills of locomotive	8 ft. 11 in.
Width over cab door posts	9 ft.
Width over all equipment hoods	5 ft. 3 in.
Height from rail to bottom of side sills	3 ft. 4 in.
Height from rail to top of floor	4 ft. 6¾ in.
Height from rail to top of cab	12 ft. 8¼ in.
Truck wheel base	7 ft.
Diameter of wheels	36 in.
Coupler height (M.C.B.)	34½ in.

The locomotives, which are designed for double end operation, for either switching or road service, upon completion, with entire electrical and air brake equipment will weigh approximately 72,000 lb., and the remaining weight of approximately 14 tons, will be made up by ballasting with slag, concrete, or cast iron slabs, securely fastened to sills.

The underframe is made up of members assembled as follows: Six longitudinal sills forming centre, intermediate and side sills of 12 in. I beams, extending from end sill to end sill and securely fastened to end sills with connection angles. End sills consist of 15 in. 33 lb. channels at each end of underframe extending straight for 15 in. on each side of centre line and dropping back 13 in. to corner of underframe. Flanges of end sill are coped out at corner of car, and web is bent around outside of side sill and projects back for sufficient distance to make a good connection. Cross members or separators, of which there are 5 per locomotive consist of 8 in. I beams, securely connected to longitudinal sills by double angle connections at each end, fastened on with ¾ in. rivets. Bolsters are built of 14 x 1 in. plates, extending entirely across car, and riveted to top and bottom of longitudinal sills, with an extra 14 x 1 in. plate extending across the bottom, from the intermediate sill on one side of centre sill to the intermediate sill on the other. Draft sills are 12 in. channels, securely rivcted through their flanges to the bottom flanges of centre sills and braced side-ways by heavy forged bars and angle connections to the buffer blocks. Draft gear, is twin spring, and couplers are cast steel, 5 x 7 shank, with M.C.B. butt for keyed draft gear. The uncoupling device is of ordinary freight car type extending across the locomotive at a point just ahead of underframe corner and is let into wood floor flush. Flooring is 2¾ tongued and grooved long leaf yellow pine.

The cab is framed of angles, channels and bars with 1/16 in. steel sheathing, steel angle carlines and wood roof. It has two side doors and two end doors at diagonal corners, with four drop windows in sides, and two in ends at diagonal corners. The motorman's seat is removable, with two sockets in floor, for driving from either end of locomotive. All control levers and handles are duplicated in diagonal corners, for reversible operation of locomotives. The hoods are framed of angles, channels and bars with 1/16 in. steel sheathing and 1/16 in. steel roofing. Each hood is equipped with one removable steel door, for access to equipment therein. The hood is narrow enough to allow a walkway all around outside of platform at each end, and platform is equipped with pipe railing, mounted on pipe stanchions, at the outside edge, with an inside hand rail around top of cab roof. All grab handles, steps and safety appliances are in accordance with requirements of Board of Railway Commissioners of Canada and Interstate Commerce Commission. At each side of cab, at side door posts, steps are provided for access to the roof and immediately over each side door on roof is mounted one grab handle.

There is one trolley base on each side of locomotive mounted on an extension platform built out from roof on locomotive. Each locomotive is equipped with one bell, one set of chime whistles and one electric head light. At each end of locomotive a large sand box is built into hood—equipped with Ohio Brass Co.'s air sanders and air hose of 2 in. steel pipe for leading right hand wheels on each truck. Trucks are arch bar type, 4 wheel, with 36 in. journals, M.C.B., and journal boxes with contained parts. Each truck bolster is built up of 2, 10 in. 40 lb. I beams, with a cast steel separator at the middle, and flat plate spacers at the outer ends. Transoms are 12 in. 30 lb. channels, mounted on cast steel brackets at arch bars which are riveted to the spring plank. Spring plank is a 13 in. rolled steel channel. Brake is of an equalizer type for inside motor, with double brake levers of ⅝ in. thick bars and single hangers of 1 in. thick bars. Brake shoes are cast steel of M.C.B. contour, with M.C.B. steel back brake shoes. Top arch bars are 5 x 1⅛ and bottom tie bar is 5 x 1½. Bottom arch bar extends out past centre of journal box 2 ft., to where it is joined by tie bar, the two forming a truss to support end frame, which is a 4 x 4 rolled steel angle.

Each locomotive is being equipped with Westinghouse air brake, 14 in. cylinders, with Independent reservoirs and two compressors. Extra compressor capacity is provided to supply air dumping mechanism on dump car. Parasite reservoirs and governors are provided and so arranged that when operated in trains, all governors in the train will cut in at the lowest setting pressure in the series.

The locomotives will be equipped with multiple unit control, six having General Electric control, with second-hand motors of G.E. 66 type. The other six locomotives will be equipped with Westinghouse control and new Westinghouse motors, type 562-A. Each locoomtive should develop at starting, a tractive effort of approximately 30,000 lb. on dry rails.

The air brake equipment for the 12 locomotives of the Westinghouse no. 14 EL type. The equipment for each locomotive includes two D-4-P 50 ft. Westinghouse motor-driven compressors, which have a combined capacity sufficient to supply the air for both braking and dumping purposes. The two compressors on each locomotive are started and stopped simultaneously by means of the Westinghouse governor synchronizing system, which also permits simultaneous operation of all compressors in cases where two or more locomotives are operating together. The brake valves are of the K-14-A type, having both the automatic and independent valves mounted in a common structure, with two operating handles readily accessible. The air gauges have illuminated dials for night operation. The air for operating the dump cars attached to these locomotives is taken from a separate parasite reservoir, the air pressure coming from the air brake reservoirs through a parasite governor which is installed to prevent the dumping apparatus from depleting the pressure available for braking below a safe predetermined minimum. An operating valve in the locomotive cab controls the admission of air to the dump line and thus operates the car dumping apparatus. The air equipment on each locomotive includes a clarion whistle.

The Canadian Westinghouse Co.'s contract covers the necessary electrical equipment for use with 6-ton locomotives, with 1,500 volt insulation and for 600 volt operation. Each equipment consists of four no. 562-D-5 railway motors with pinions and gear cases. The motors are rated at 100 h.p. (75 kw. 600 volt). The control equipment is of the unit switch type, each equipment consisting of 1 type 496-H main knife switch complete with two terminals; 1 type 265-D-25 switch group; 1 type 265-D-26 switch group; 1 type 284-L-4 reverser; 1 set of grid resistance; 2 type 494-B control and reset switches S-192486; 2 type 337-D-2 master controllers; 1 type 187-A control resistor S 171769-A; 2 type 651-A junction boxes; 2 type 448-D train line receptacles; 2 type 448-M train line receptacles; 2 type 364-A motor cutout switches; 1 type 449 train line jumper; 1 type 449-G-2 train line jumper.

The order for these locomotives was given by the Hydro Electric Power Commission of Ontario to the C. E. A. Carr Co., Toronto, which contracted to supply 12 locomotive bodies. with steel cabs, trucks, axles and wheels complete, and also to supply six of the locomotive equipments complete, each locomotive with motors, controllers, all wiring for motors, control, light and other circuits, also complete air brake equipment, as per G. E. Co. type l.p. locomotives, air brake equipment with two 25-ft. air compressors per locomotive and enough air tank capacity to furnish air to twelve 20-yard dump cars, or Westinghouse air brake equipment of similar type and capacity, in fact the six locomotives to be complete ready in every detail for operation, less overhead trolley operation mechanism. For the other six locomotives, for which the C. E. A. Carr Co. contracted to supply the bodies, steel cabs, trucks, axles and wheels, the Commission supplied the electrical and air brake equipment. The trucks, bodies and cabs for the whole 12 locomotives are being built by the National Steel Car Co., Hamilton, Ont.

Steel Tired Wheels on British Columbia Electric Railway.

By W. G. Murrin, Assistant General Manager, B. C. E. Ry.

Steel tired wheels have been in common use on European electric railways for some years, but on this continent, excepting on some interurban lines, this practice is almost unknown. The British Columbia Electric Ry., operating over 250 miles of track, of which 180 miles are interurban, has developed a practice of using on new equipments rolled-steel wheels which are afterwards made into centres and fitted with tires. This procedure has been found economical under local conditions and may be of interest to some other railways since the prices of both chilled iron and steel wheels are mounting skyward.

The large amount of interurban equipment on this railway, including 10 heavy locomotives, required suitable machinery in its repair shops, including a 42-in. wheel lathe. This no doubt facilitated the introduction of steel wheels on the city equipments, but other factors such as the distance of this property from wheel makers, and local climatic conditions which, particularly in Vancouver, cause unusually slippery rails during the wet season, contributed to the development of this practice, experience having indicated that slid flats are less prevalent with steel than with chilled iron wheels. Flats on the steel wheels, also, can be more easily remedied.

A brief history of the experiences which led to the adoption of steel tires will perhaps be of interest. In 1905 the standard wheels were 33-in. cast iron, single-web plate wheels being used for interurban equipment. A number of double truck city cars of the Narragansett convertible type were built and equipped with 30-in. wheels, but the smaller motor clearance on temporary ballasted tracks, and the apparent tendency of the smaller wheel to develop slid flats more rapidly than the others led to their being discarded. In 1909 two experimental sets of steel tired wheels of English manufacture were installed, one each on city and interurban cars, and the performance of these resulted in specifying 33-in. rolled steel wheels for 30 new city cars ordered in 1910. The following year, government regulations forced the elimination of iron wheels from all interurban passenger equipments, owing to the danger from broken flanges, etc., and a number of cars were equipped with steel-tired wheels having cast iron centre of the Midvale bolted type. The noticeable reduction of the flat wheel nuisance which followed the use of steel resulted in extending its application to city cars, and consequently the shops were equipped with suitable machinery to care for them.

Then the price of steel wheels began to rise, and the economy of using tires suggested the idea of putting them on the steel wheels. For both city and interurban equipments, rolled steel wheels are selected of suitable dimensions so that at their final turning they can be made into centres. The English method of tire fastening, by rolling the inside edge of the tire over that of the centre was adopted for the city wheels, and the Midvale bolted tire, now rapidly becoming standard, was selected for the interurban wheels.

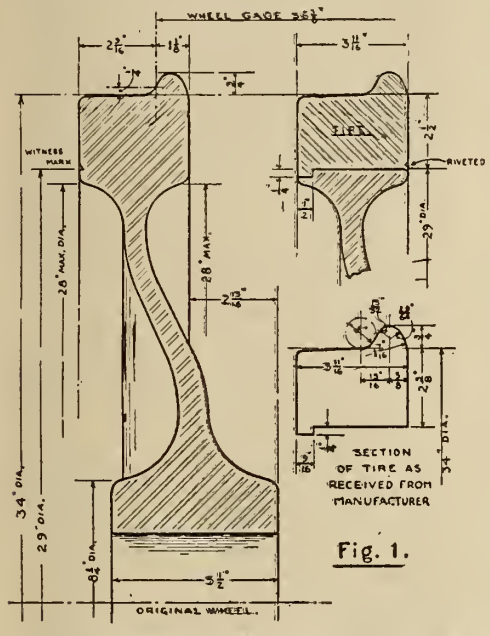


Fig. 1.

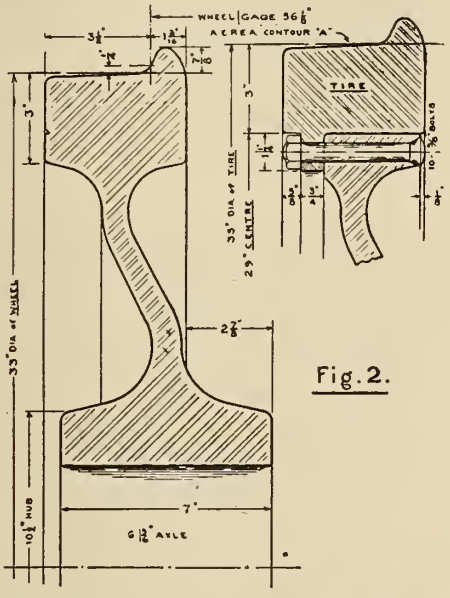


Fig. 2.

Worn steel wheels are made into centres and are equipped with tires. City and interurban wheels are shown in figs. 1 and 2 respectively.

Experience so far has shown that the use of steel tires effects a saving over that of either solid steel or chilled iron wheels, even if the f.c.s. wheel is included. The amount of steel scrapped from a worn-out tire is considerably less than from a solid wheel, and a market for scrap tires can be found where the wheel centres cannot be disposed of. The life of a tire is about the same as that of a steel wheel and averages about four years, during which time four cast iron wheels would have to be installed. According to prices as at the end of 1916, the costs per thousand car-miles of city equipment, including shop costs and returns for scrap, etc., were for chilled iron f.c.s. wheels, 30c; rolled steel wheels, 25c, and for tires, 20c.

There is also a saving in time for cars in shop, as during the four years a car with iron wheels will be shopped 2 to 15 times for wheel grinding, rewheeling, etc., as compared with four to six times for turning or renewing tires. Iron wheels are scrapped mostly for slid flats, shelled out spots or chipped flanges, and frequently a car has been shopped for wheel change after less than a week's running. Steel wheels or tires are nearly always shopped for worn flanges, the tendency of alternate wheels to wear sharp being cared for by changing the positions of the wheels under the car when half worn. Except in unusual cases, such as for bad slid flats from emergency stops, proper inspection makes it possible to attend to the steel wheels at the time of general overhauling, so that no time is lost on this account, the rule being that the wheels are ready for return to the car long before the inspection and overhauling of the motors, control, brakes and other equipment on the car has been completed.

The accompanying drawings show sections of the wheels as purchased from the manufacturer, and after re-tiring, fig 1 being the city equipment and fig 2 the interurban. The city wheel weighs practically the same after re-tiring as before. The interurban wheel with steel centre is much lighter than with a specially built cast iron centre and has a neat appearance with its tire.—Electric Railway Journal.

Lethbridge Municipal Railway Report.

Following are extracts from the commissioners' and auditors' reports for 1916 which have only been issued recently:

Revenue.

Traffic	$47,812.55
Advertising	574.50
Rental electric substation	720.00
Earnings, merry-go-round	487.34
Sale unclaimed personal property	45.15
Net deficit	27,924.89
	$77,564.43

Expenditures.

Operation and maintenance	$37,657.15
Administration and miscellaneous	3,003.10
Merry-go-round operation	181.95
Merry-go-round depreciation	750.00
Debenture interest	20,063.35
Sinking fund	9,903.14
Insurance	401.51
Taxes	5,604.23
	$77,564.43

Commissioner Graves in a report dated June 28, 1917, says: "Our street railway has shown very satisfactory returns considering everything. I have made a careful study of statistics published by other street railway systems, large and small, privately owned and otherwise, and I find our cost per car mile compares very favorably with any of them. Passengers carried per car mile is low with us, on account of population, but passengers carried per 100 of capita, is quite up to the average. I have made it a rule to keep the equipment fully repaired and in a good state of efficiency, which feature I note is being sadly neglected in some of our other cities. The ties which have been down for a number of years will require replacing and expenses on track maintenance will be heavy from now on.

"During the first five months of 1916 our Red Line obtained considerable additional traffic owing to soldiers at the fair grounds. This year to date shows a falling off of about $25 a day on this line, in fact there was so little patronage for this car that it was considered advisable to reconstruct two small cars, so that they could be operated from either end and discontinue the park section during certain months and by shortening the run,

give a faster service for 6th Avenue points. These cars are ready, but the service to the park will require the through service up to the middle or end of September, when the change will be put into effect. However, in spite of the falling off on the Red Line, increases in wages, cost of materials, interest, sinking fund payments and taxes, the consumption of power has been reduced, and the traffic on other lines has increased so that I am reasonably confident that the system will not be more than $1,000 to $1,500 below 1916 in net results."

Electric Railway Projects, Construction, Betterments, Etc.

Brandon Municipal Ry.—We are officially advised that nothing further has been done in regard to the proposal to extend the line to Lake Percy, other than making an inspection of the route recently. It is not expected that anything will be done in the way of construction at present. T. Boden, Brandon, Man., is Superintendent. (Oct., pg. 407.)

British Columbia Electric Ry.—The Kitsilano bridge, owned by the C. P. R., and leased with the Lulu Island Ry. to the B. C. E. R. is claimed to be a menace to navigation. An agitation was launched by the British Columbia Tug Owners' Association, Nov. 2, with the view of having it removed.

An arrangement has been completed between the company and the North Vancouver city and district councils, for the extension of the company's tracks on to the ferry wharf at North Vancouver. The estimated cost of the work is $4,000 towards which the two councils will ask the ratepayers to pass bylaws at the annual elections in January, providing $2,500.

The Timberland Lumber Co., of New Westminster, B.C., is building a new mill on the south bank of the Fraser River, just west of the railway and highway bridge. It proposes to link up with the B. C. E. R. by a spur line at a cost of about $30,000. It is reported that arrangements for building this spur have been completed, the lumber company to do all the work, and the B. C. E. R. to provide the rails and the wire for overhead work. (Nov. pg. 444.)

Guelph Radial Ry.—We are officially advised that a single end two car turnout is being put in on Carden St., Guelph, Ont. A. H. Foster, Ont., is Manager. (Nov., pg. 444.)

London St. Ry.—The Ontario Railway and Municipal Board has made an inspection of the company's lines in connection with the building of the Tecumseh St. line. (Oct. pg. 407.)

The Niagara, St. Catharines & Toronto Ry. has practically completed rerailing and rebonding its line at Niagara Falls, with 80 lb. rails, and 90 lb. girder rails in pavement. On the local line, from the Roman Catholic church to Montrose, about 4½ miles, 65 lb. rails have been laid instead of 56 lb. (Nov., pg. 444.)

Nipissing Central Ry.—We are officially advised that a 6-car siding has been built at Haileybury, Ont., for the Riordan Pulp and Paper Co., and that the reconstruction of the car barns at North Cobalt, which were partially destroyed by fire, Mar. 4, is about 80% completed.

Port Arthur Civic Ry.—We are officially advised that there are under construction two timber bridges over the McIntyre River on the main line. The specifications were approved by the Ontario Railway and Municipal Board. The estimated cost is $2,890. (Nov. pg. 444.)

Toronto and York Radial Ry.—We are officially advised that the object of the spur line proposed to be built to connect the company's track at Aurora, Ont., with the G. T. R., is to facilitate the delivery of cars to the factories there and thereby save the teaming which is now necessary from the west side of the town to the G.T.R. station. The proposed siding is located 1½ miles south of the town, at the point where Yonge St. crosses the G.T.R. and will be about 1,500 ft. long, single track. An inspection of the locality was made at the end of October by a Board of Railway Commissioners' engineer who suggested that all the parties interested should get together and reach an amicable agreement in regard to the matter. (Nov. pg 444.)

Toronto Civic Ry.—We are officially advised that the extension to the Bloor Division from Quebec Ave. to Runnymede Road, in Ward Seven, has been completed. Tenders for the work were called in June, but no contract was let. Construction was started Sept. 28, and was carried out under the direction of D. W. Harvey, Superintendent. The extension consists of half a mile of single track, laid with 56 lb. steel rails, and ballasted with gravel. A car service was put in operation Nov. 5. (Nov. pg. 444.)

Fares on Electric Railways.—The question of increases in fares charged on electric street railways is occupying the attention of those concerned in practically every country where they are operated. This applies to railways operated by companies, as well as by municipalities. At a meeting of the Municipal Tramways Association of Great Britain recently, it developed that 16 municipal street railways were not able to turn the corner financially, while 20 others placed their profits at not more than sixpence per 100 passengers. Some others, to induce traffic, had lengthened the distance carried for a particular sum, and some had decreased fares, with success. This could be done in the larger cities where there are large aggregations of people, but in the smaller towns there seemed to be nothing but to carry the loss. It was held that the only true basis for fixing fares, is the cost of providing the service rendered, and all who avail themselves of the service to be required to pay on a uniform scale. This seems to be the true basis of fixing fares, and therefore is an argument in favor of the zone system. Under the present system in Canada, the long haul passenger is carried at a loss, and the short haul passenger is discouraged from travelling, owing to being penalized to make up the loss on the long haul passenger.

Sandwich, Windsor and Amherstburg Ry.—Consideration is being given in Windsor, Ont., to a plan for settling various questions at issue between the Sandwich, Windsor and Amherstburg Ry., and the city, and it is expected that a joint conference will be held to see if an agreement can be reached. The Ontario Railway and Municipal Board has advised that if an agreement cannot be arrived at, the council should state what it wants done and the board will then take action.

About 290 jitneys are being operated in Winnipeg under the new bylaw as against about 500 which were operating before the owners were compelled to take out bonds.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies.—

	Sept. '17	Sept., '17	3 mths. to Sept. 30,'17	3 mths. to Sept. 30,'16
Gross . .	$457,709	$414,811	$1,350,512	$1,250,396
Expenses	381,591	351,760	1,157,813	1,050,011
Net . .	76,118	63,051	192,699	200,385

Calgary Municipal Ry.—Surplus earnings over operating expenses for October, $1,144. Total earnings for 10 months ended Oct. 31, $458,388.99; expenditures $478,288.38. There are some credits not yet adjusted amounting to about $19,000, which when added will about even up the receipts and expenditures.

Cape Breton Electric Co.—

	Sept. '17	Sept., '17	3 mths. to Sept. 30,'17	3 mths. to Sept. 30,'16
Gross	$39,805.36	$33.804.16	$119,989.66	$101,927.53
Exp.	25,628.29	18,189.45	77,588.69	56,545.52
Net .	14,177.07	15,614.71	42,400.96	45,382.01

Edmonton Radial Ry.—A departmental report states that for September there was a surplus of receipts over operating expenses of $3,073.03, but a deficit of $17,996.70 when interest charges and depreciation were taken into consideration. The number of passengers carried was 453,836 against 737,068 in Sept., 1916.

Montreal and Southern Counties Ry.—The following board of directors have been elected for the current year: H. G. Kelley, President; Frank Scott, Vice President and Treasurer; J. E. Dalrymple, Vice President; J. A. Yates, Secretary; W. H. Ardley, Comptroller; W. H. Biggar, K.C., General Counsel. The General Manager is W. B. Powell.

Regina Municipal Railway—

	Oct. 1917	Oct. 1916	10 months to Oct. 31, 1917
Gross	$18,628.60	$17,890.99	$187,485.50
Expenses	17,331.84	15,238.98	163,227.85
Net	936.85	2,658.01	24,247.65

Toronto Ry., Toronto and York Radial Ry. and allied companies.—

	Sept. '17	Sept., '17	9 mths. to Sept. 30,'17	9 mths. to Sept. 30,'16
Gross .	$1,023,517	$913,535	$8,891,112	$8,005,764
Exp.	559,590	452,979	4,732,305	4,087,653
Net . .	463,927	460,556	4,158,807	3,918,111

W. A. Read & Co., New York, sold $750,000 of the company's one year 6% gold notes, Nov. 21.

Winnipeg Electric Ry. and allied companies.—

	Sept. '17	Sept., '17	9 mths. to Sept. 30,'17	9 mths. to Sept. 30,'16
Gross .	$267,170	$267,497	$2,431,794	$2,561,454
Exp. .	203,744	179,644	1,861,667	1,582,571
Net .	63,426	87,853	570,127	878,883

Toronto Suburban Railway's Highway Crossings.—Canadian Railway and Marine World for October gave particulars of several orders passed by the Ontario Railway and Municipal Board, respecting protection of highway crossings along the T.S.R.'s extension from Lambton to Guelph. Another order was passed Oct. 26, respecting the crossing of Hurontario St., near stop 37, and the Hickey Farm. This order rescinds the one passed Sept. 20 in regard to the same crossing, and requires that every car going in either direction shall come to an absolute dead stop at the shelter known as stop 37. Every car going westerly shall be under complete and absolute control, from the time when it is within 50 ft. of the east side of the highway, that is, that although the car shall come to an absolute dead stop at the shelter on the west side of the highway, in addition thereto, it shall be under such control before reaching the eastern side of the highway, that, in the event of a vehicle approaching the crossing, the motorman may be able to stop immediately, anywhere on the crossing, when necessary to avoid a collision.

Marine Department

Shipbuilding Activities Throughout Canada.

STEEL AND WOODEN SHIPBUILDING FOR BRITISH GOVERNMENT.

Canadian Allis-Chalmers, Ltd., as announced in our last issue, received a contract from the Imperial Munitions Board for the construction of four general cargo freight steamships of 3,500 tons each for the British Government. The vessels, which will be built at the company's shipyard on the Niagara River, near Bridgeburg, Ont., will be 261 ft. long overall, 42½ ft. breadth moulded, and 23 ft. depth moulded, of steel construction throughout, to class 100 A1 British Lloyd's Register. They will be of the usual bulk cargo type, but with special features adapting them for use during the present war time conditions, being provided with appliances to protect them against submarine attacks, in addition to being arranged with a view to evade visibility and identification. The steel will be furnished by the British Government through the Cunard Steamship Co. and it is expected that a considerable tonnage of this steel will be available for delivery this year, enabling the builders to start operations immediately. The propelling machinery will be built at the company's Davenport works, Toronto. The main engine will be of the triple expansion type, the size being 20, 33, and 54 x 40 in. stroke and of the surface condensing type. The two boilers will be 14 ft. diameter and 12 ft. long, for a working pressure of 180 lb. They will be fitted, for economical working, with heated draft. The coal bunkers will be located under the bridge deck and in the wings of the boiler space and will hold over 500 tons. There will be three cargo holds; nos. 1 and 2 holds to have one cargo hatch each, and no. 3 hold, abaft the engine room, will have two cargo hatches. Each cargo hatch will be served by two independent cargo derrick booms, each of five tons capacity, and each boom will have its independent cargo winch. The steam steering engine will be located on the upper deck, in a special house abaft of the engine casing. The life saving equipment will include two 26 ft. life boats and one 18 ft. working boat. The water ballast tanks, 3 ft. deep amidships, will extend the entire length from the collision bulkhead forward to the peak tank aft. The accommodations throughout the ship will be steam heated and the lighting throughout will be by electricity.

J. Coughlan & Sons, Vancouver, B.C.—Work was resumed at these yards. Oct. 29, after having been suspended since Oct. 3, owing to a strike of employes. The men recommenced work on the understanding that the shop be made a closed one, and pending the reports of the United States Wage Adjustment Board, which is investigating the general situation in the shipyards along the U.S. Pacific coast Six steel steamships are on order at these yards for the Imperial Munitions Board, and it was anticipated that the first of them would have been launched in November.

The Foundation Co., Victoria, B.C.—Four of the five hulls under construction for the Imperial Munitions Board are reported to be in an advanced stage of construction.

Fraser Brace & Co., who, as mentioned in our last issue, have a contract from the Imperial Munitions Board for the construction of the hulls of four wooden steamships at Montreal, have acquired a site for a shipbuilding yard of approximately eight acres at Cote St. Paul, on the south side of the Lachine Canal. Keels for the first two vessels have been laid on the eastern bank of the slip, and these, when completed, will be launched in the usual manner. The other two keels will be laid in the bed of the slip, and when completed, the slip will be flooded from the canal, and thus, the erection of launching ways will be avoided. It is reported that an additional contract for four similar vessels is being negotiated. Machine shop, stores and office buildings are in course of erection, and it is expected to employ about 600 men on the present contract.

Fraser, Brace & Clark, Ltd., has been incorporated under the Dominion Companies Act, with $500,000 authorized capital, and office at Montreal, to build, own and operate and deal in vessels of every description, and to carry on a general transportation business, also to build warehouses, wharves, docks, etc. As stated in our last issue, Fraser, Brace & Co. hold contracts from the Imperial Munitions Board for the construction of four wooden steamships, for which, it is reported the keels have been laid at the company's yard on the south bank of the Lachine Canal, between Atwater and Cote St. Paul bridges.

Grant & Horne, St. John, N.B., laid the keel of a wooden steamship for the Imperial Munitions Board, at their Courtenay Bay yard recently. It is of British Columbia fir, 250 ft. long.

The William Lyall Shipbuilding Co. expected to have the last of the keels of the six vessels which it is building at its North Vancouver yards, laid by the end of November. Construction work on four of the hulls is in an advanced state, but no date has been announced for the first launching.

The Victoria Machinery Depot, Victoria, has under contract from the Imperial Munitions Board, the construction of 12 boilers of the Howden water tube type for wooden steamships which the board is having built on the Pacific coast. It is expected that other similar orders will be placed shortly.

The s.s. War Dart was launched at the Port Arthur Shipbuilding Co.'s yards at Port Arthur, Ont., Nov. 3. It is expected that she will be completed and dispatched to the coast before navigation closes. She is the third vessel of this type launched by the company this year. Her dimensions are, length 261 ft., beam 43½ ft., depth 28 ft. 2 ins., with a gross tonnage of 2,406 tons and deadweight carrying capacity of 4,280.

The s.s. War Honour was launched at the Detroit Shipbuilding Co.'s yards at Wyandotte, Mich., Nov. 3. This is one of the series of vessels ordered for British interests, and which has since been taken over by the United States Shipping Board. Like other vessels built at lake shipyards, it is of full Welland Canal size, with a carrying capacity of about 3,000 tons. It was expected that she would be complete and ready for sea about the end of November.

Ships' Carpenters engaged on wooden steamships for the Imperial Munitions Board, at the Cameron-Genoa mills and the Foundation Co.'s yards at Victoria, B.C., threatened to strike work toward the end of November unless they were granted an increase of 33 1-3% in their pay. The rate is $4.50 a day and they want $6. It was reported that the Imperial Munitions Board, which controls the rate of wages, had offered $5 a day but was not disposed to grant the full increase asked, which it considered out of all proportion to the class of labor employed, a large part of which is unskilled.

The installation of the engines and equipment in the wooden hulls of the steamships being built in British Columbia for the Imperial Munitions Board, will be carried out in a large shed which is being built on pier 2 at Victoria. As announced in our last issue, the contract for building the shed has been awarded to Grant, Smith & Macdonnell, Ltd. The building will be 703 ft. long by 200 ft. wide, and the walls will be 22 ft. high under the eaves and 29 ft. at the ridge, with a 16 ft. clearance inside. It is stated that the shed will have the greatest floor space of any shed on the Pacific coast. The building will be entirely of wood, over 2,000,000 ft. of lumber being required for its erection. A most elaborate arrangement of hydrants and standpipes protection. Each 18 ft. section of the walls will form a sliding door, for easy will be installed to ensure efficient fire access to all parts of the building. The plans show a depressed railway track running from the shore end right through the centre of the shed, and surface tracks on the outside of the building at each side. Sufficient skylights and windows will be provided to supply adequate light during the daytime, and large electric lamps will be provided for night work. The most modern system of ventilation will be installed. It is expected that the building will be completed during, or by the end of January, and as each hull is launched, she will be brought round to the shed for her equipment. H. A. Bayfield, formerly Superintendent of Dredges for the Dominion Government on the Pacific coast, has been appointed in charge of the assembling of the equipment at the shed.

GENERAL SHIPBUILDING NOTES.

The Anglo-Newfoundland Development Co. is reported to be building two 350 ton sailing ships equipped with auxiliary power, at Botwood, Nfld.

Cameron-Genoa Mills Shipbuilders Ltd.—It is reported that negotiations are in progress with French interests, through H. W. Brown, General Manager, Canada West Coast Navigation Co., for the construction by this company, of six auxiliary powered schooners of the same type as those built recently for the Canada West Coast Navigation Co., and four wooden steamships, similar to those being built on the Pacific coast for the Imperial Munitions Board. Plans are said to have been prepared for laying out

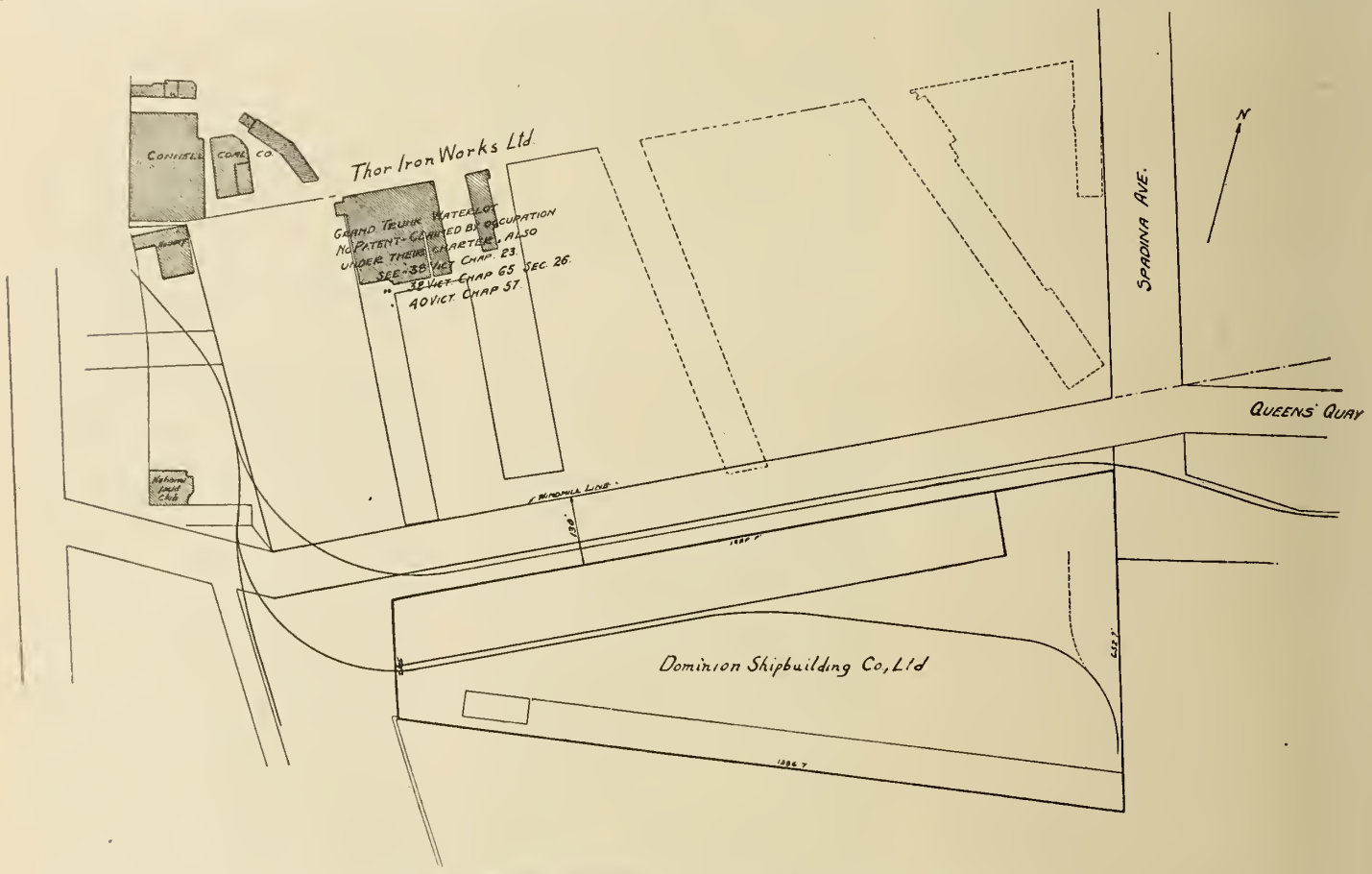
three additional building slips at the company's yards near Victoria, B.C.

Canada West Coast Navigation Co.'s last vessel of the schooner type, with auxiliary power, to be built at Victoria, B.C., by Cameron-Genoa Mills Shipbuilders, Ltd., was launched there, Nov. 23, and christened Beatrice Castle. She is reported to have been sold to U. S. interests, with which W. B. Castle, President, Zena Iron Works, Duluth, Minn., is closely concerned. It is reported that some difficulty is being experienced in obtaining delivery of Bolinder engines, and that one or two of the vessels launched recently have been dispatched on their voyages without auxiliary power. It is also stated that the engines for the vessel Joan Steedman are expected to arrive early in December, and that she is being held in port with the object of equipping her before she sails.

other purposes. The company's shipbuilding plant is to be laid out on a site to be provided by the Toronto Harbor Commission on reclaimed land situated due south of the Thor Iron Works' shipyard, near the foot of Bathurst St. This tract of land extends from the foot of Spadina Ave., westerly for 1,386 ft. and consists of 15.2 acres. The accompanying plan shows the position of the Thor shipyard, and also of the reclaimed tract of land. The Toronto Harbor Commission is carrying out the engineering work connected with the preparation of the site, and will also place the contracts for the construction and equipment of the plant, which will consist of five shipbuilding berths and the necessary shops. The company has orders for 11 steel steamships for undisclosed interests, and it is expected that the plant will be completed in the spring, ready for the employment of 2,000 men. L. Dahlgren, who is connected with Thor Iron Works, Ltd., will be Vice President and General Manager, and A. C. McMaster, Secretary. Thor Iron Works, Ltd., will be continued as heretofore with L. Dahlgren, who has acquired about 70% of the stock, as President and General Manager. It is said that the principal interest in the company is held by Cristofer Hannevig Inc. of New York, and that the vessels said to have been ordered are for Norwegian interests.

some schooners at his yards shortly.

The International Shipbuilding Corporation, Ltd., Newcastle, N.B., incorporated recently under the Dominion Companies Act, with $2,000,000 authorized capital, is building four-masted schooners of about 575 tons register, of the following dimensions: length of keel 155 ft., beam 37 ft., depth of hold 13 ft. The company is reported to be remodelling a lumber mill at Nordin N.B., on the Miramichi River, formerly owned by the Rosebank Lumber Co., and that machinery is being installed. We are advised that the company has closed no contracts for vessels, and is apparently building for the market for the time being. Among those principally interested are said to be A. E. McCurdy, Manager, Royal Bank; Jos. Ander, Manager of Canadian Gear Works, both of Newcastle; and F. MacNaught, Managing Director, Maritime Foundry & Machine Works, Chatham, N.B.



Site of Dominion Shipbuilding Co.'s Ltd., Plant, Toronto Harbor.

J. Coughlan & Sons have deposited at the Public Works Department, Ottawa, Ont., a description of site and plans for a wharf and four launching ways, it is proposed to build on False Creek, Vancouver, B.C., in front of lots 1 to 8 inclusive, block 1, District Lot 200-A, Vancouver District.

The Davie Shipbuilding Co., Levis, Que. is reported to have received an order for six military barges, 130 ft. long, in addition to two already under construction there.

The Dominion Shipbuilding Co., Ltd., has been incorporated under the Ontario Companies Act, with $1,000,000 authorized capital and office at 12 King St. East, Toronto, to carry on a general shipbuilding business, and in connection therewith to build and operate steam and other vessels, graving and other docks, wharves, engines, boilers, and all kinds of machinery, machine tools and plant, necessary for the construction of vessels and for

The Foundation Co. is reported to have under consideration the building of six wooden steamships at its Victoria yards, for private interests. The company is also reported to have applied for a lease for two years of its present shipbuilding site, to become effective at the expiry of the present lease for a year, with the option of renewal month by month thereafter.

J. A. Gregory, Grand Bay, Nfld., will, it is reported, commence the building of

The Kent Shipbuilding Co., St. John, N.B., is reported to be interested in a proposal to establish a shipbuilding plant at Tufts Cove, near Dartmouth, N.S.

The McKeen Shipbuilding Co., St. John, N.B., is reported to be interested in a shipbuilding plant at Liverpool, N.S., where it is preparing to commence the construction of wooden sailing ships, and later to undertake vessels of a heavier type, including steamships.

Midland Shipbuilding Co., Ltd., Midland, Ont., has taken over the business of Midland Drydock Co., Ltd., there.

Montreal Shipbuilders, Ltd., has been incorporated under the Dominion Companies Act, with $300,000 authorized capital and office at Montreal, to own, operate, build and repair ships and vessels of every description, also wharves, docks, grain elevators, and other shipping facilities, and to carry on a general shipbuilding business.

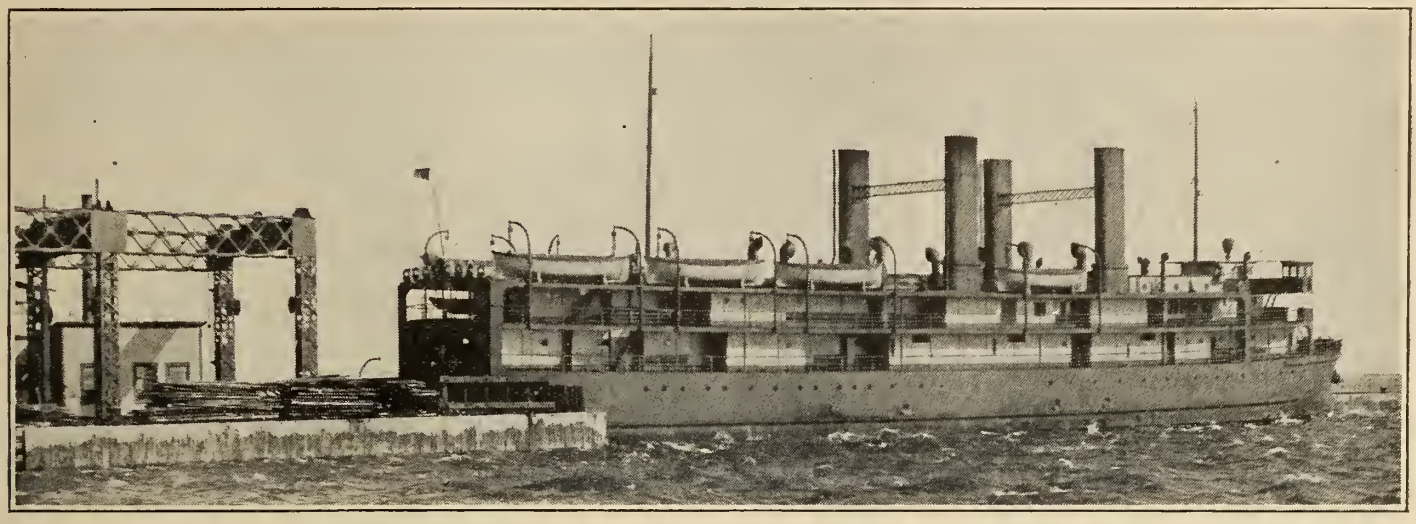
The Newfoundland Shipbuilding Co.'s shipbuilding plant under construction at Harbor Grace, Nfld., was inspected by a number of government officials and others toward the end of October. The plant covers a space 850 ft. square, and includes ship yards, offices and stores and foundries. There are berths for the construction of five vessels of about 1,100 tons each, and the berths are so arranged that they can easily be altered so as to build steel vessels of about 5,000 tons capacity. It is hoped to have the construction and equipment of the yards so far advanced by the end of the year, that vessel building will be commenced in January, after which, it is hoped to turn out one vessel a month. Orders are on hand for thirteen auxiliary powered schooners of varying tonnage. C. Hannevig of New York is chiefly interested in the company.

D. Pelley, South West River, Nfld., launched a 200 ton schooner at his yards there recently, and intends laying the keels of two similar vessels during the winter.

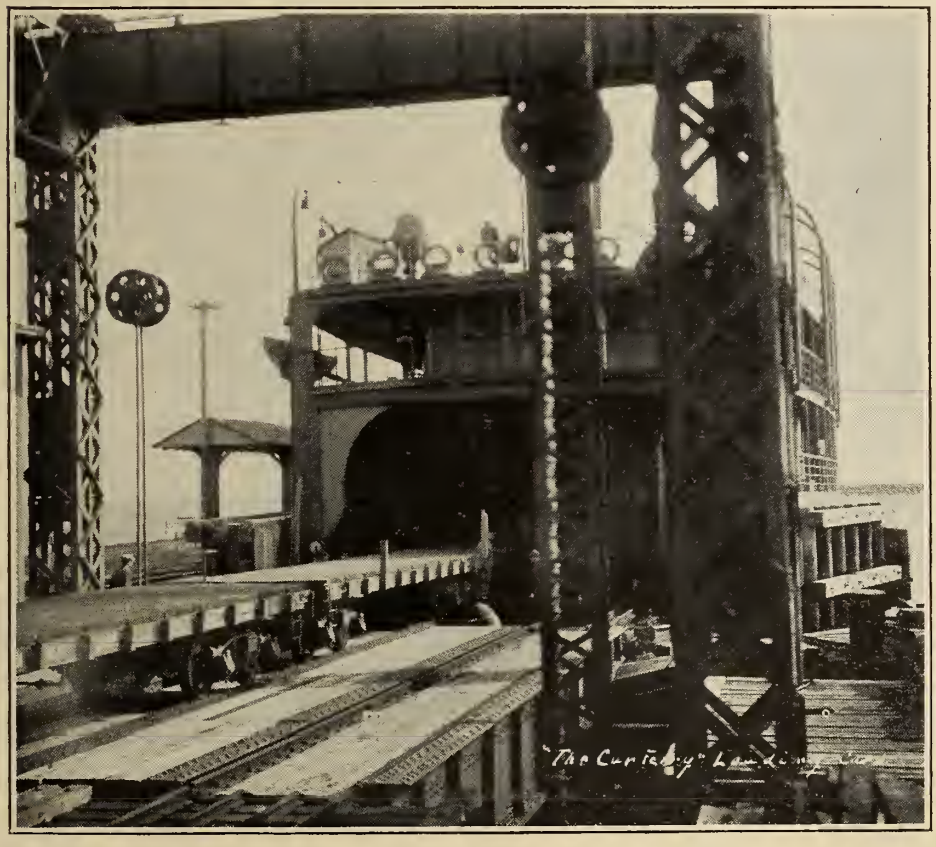
The Quebec Shipbuilding and Repair Co. launched a four masted, auxiliary powered schooner at its St. Laurent yards on the Isle of Orleans, Que., recently. It is stated to be the first wooden ship to be built in Quebec, since 1893. The dimensions are, length over all, 223 ft., breadth 42 ft., depth of hold 20 ft.; approximate register tonnage 1,350 tons; dead weight capacity, about 2,100 tons. The vessel was christened M. P. Connolly, and was towed to the Louise dock, Quebec, where finishing touches were made. It has been built for private owners.

The reinforced concrete steamship under construction for the Atlas Construction Co., was launched at the Montreal Dry Dock and Shipbuilding Co.'s yards at Montreal, during November. Some details of this vessel have been given in previous issues.

Rafuse Bros., Bridgewater, N.S., are reported to have purchased the shipbuilding yard and premises at Shelburne, N.S., from the late Joseph McGill's estate.



Car Ferry Steamship Prince Edward Island in her berth at Cape Tormentine, N.B.
This vessel and its terminals were fully described in Canadian Railway and Marine World for November, pg. 447.



Loading cars on to Car Ferry Steamship, Prince Edward Island.

T. C. Rice, Weymouth, N.S., is reported to have laid the keel of a large schooner.

The St. John Shipbuilding Co. is reported to be negotiating for a site for a shipyard, adjacent to the Grant and Horne yards on Courtenay Bay, St. John, N.B. Thomas Nagle is Manager.

D. H. Saker & Co., St. John, N.B., have laid the keel of the first of a series of four masted, auxiliary powered schooners. Their dimensions will be, length, keel, 165 ft., length over all 185 ft., breadth 40 ft., depth of hold 18 ft.; deadweight capacity, about 1,000 tons.

Upper Gagetown, N.B.—It is reported that there is a possibility of shipbuilding being undertaken on the bank of the St. John River at Upper Gagetown, N.B., if the necessary site can be secured at a reasonable price, and that the laying out the yards will be done during the winter.

Vancouver, B.C. It is reported that a company having local and Winnipeg interests is negotiating with the Dominion Government for a lease of a site on the eastern extremity of Industrial Island, in Vancouver harbor, for the establishment of a shipbuilding plant. The capital stock of the company is stated to be $500,000, and it is said that contracts are ready to be closed with French interests for at least five steamships of heavy tonnage.

The Clare Shipbuilding Co., Meteghan, N.S., launched a schooner of 350 register tons, 135 ft. long, early in November. The vessel was named Racewell, and it is reported that it has been sold to Newfoundland parties. The company is commencing operations on another similar vessel immediately.

The various steam and other vessels plying on Lake Winnipeg, were placed in their winter quarters during the early part of November, at Selkirk, with the exception of the Dominion Government steamship Bradbury, which was then on a trip in the Little Saskatchewan River with spawn for the fish hatcheries.

Collingwood Shipbuilding Co's Launchings in 1917.

Following are particulars of vessels launched by Collingwood Shipbuilding Co., Ltd., Collingwood, Ont., during 1917.

Cargo steamship Westmount, for Montreal Transportation Co., launched in May; length, 550 ft.; breadth, 58 ft.; depth, 31 ft.; gross tons, 7988; d.w. tons, 11,000; engines, 24-40-66 x 42; boilers, three, 13 x 11 ft.; speed, 12 knots; h.p. 2,400.

Oil tank steamship Reginolite, for Imperial Oil Co., launched June 21; length 250 ft.; breadth, 44 ft.; depth, 25 ft.; gross tons, 2642.22; d.w. tons, 3,700; engines 18-30-50 x 36; boilers, two, 13½ x 11 ft.; speed 10.5 knots, h.p. 1,200.

Oil tank steamship Talaralite, for International Oil Co., launched in October; length, 250 ft.; breadth, 44 ft.; depth, 25 ft.; gross tons, 2,642.22; d.w. tons, 3,700; engines, 18-30-50 x 36; boilers, two, 13½ x 11 ft.; speed 10.5 knots; h.p. 1,200.

Deep sea trawlers, T.R. 7, 8, 9, 10, 11 and 12, for Naval Service Department; nos. 7 and 8, launched in September, no. 9 in October, no. 10 in November, nos. 11 and 12 in December; length, 125 ft.; breadth, 23½ ft.; depth, 13½ ft. gross tons, 288; engines, 12¾-21½-35 x 24, boiler, one, 13½ x 10½ ft.; speed, 10 knots, h.p., 500.

The above shows nine launchings, the gross tonnage being 15,000.44 and the total horse power 7,800.

Maritime Provinces and Newfoundland.

Losses of sailing vessels in the Newfoundland trade through storms, German raiders and submarines since the war started have been more than made up by building within the colony and purchase abroad. The Newfoundland sailing fleet now numbers 125 vessels, and 17 more are on the stocks, the total of 142 making the largest locally owned fleet in a generation. This is exclusive of boats used only in the island trade.

The s.s. Norse I. owned by C. Hannevig, New York, and of the Newfoundland Shipbuilding Co., Harbor Grace, Nfld., was wrecked on the Newfoundland coast in October, and was reported a total loss. She was built at Wedgeport this year and was a small vessel with a crew of ten, all of whom were saved. She was carrying equipment for use in the shipbuilding yards at Harbor Grace, all of which was lost.

The Boston and Yarmouth Steamship Co.'s s.s. Prince Arthur, running between Yarmouth, N.S., and Boston, Mass., has been requisitioned by the Admiralty. It is stated that the s.s. North Star will be operated on the route in her place. The s.s. Prince Arthur was built in Hull, Eng., in 1898, her dimensions being, length 290 ft.; breadth 38 ft.; depth 16.5 ft.; tonnage, 2,188 gross, 913 register, and she is screw driven by engine of 716 n.h.p.

Eastern Steamship Lines' s.s. Governor Cobb has been placed on the Boston-St. John route, instead of the s.s. Governor Dingley, which has been transferred to the Boston-Portland route. The service of three trips a week on the Boston-St. John route is being maintained by the steamships Calvin Austin and Governor Cobb, but the latter vessel will probably be transferred shortly to the Key West-Havana route.

Sales continue to be made of the various units of the dredging fleet which was used by the Norton Griffiths Construction Co. in its operations in Courtenay Bay, St. John, N.B., under a Dominion Government contract. One of the self propelling hoppers, no. 47, was sold recently to Foley Bros., Welch, Stewart and Fauquier, for $50,000, for use in port development work at Halifax, N.S.; and it is stated that negotiations are proceeding with a U. S. firm for the sale of the balance of the hoppers. The dredge Don Frederico will also be sold shortly. Practically the whole of this fleet was owned in Southampton, Eng., and leased by the Norton Griffiths Construction Co.

Ontario and the Great Lakes.

The Pere Marquette Ry. is reported to have awarded a contract to the Gibb Dock Co., for the construction of a ferry slip at Sarnia.

The Collingwood Steamship Co., which operated its s.s. City of Meaford between Collingwood and Sault Ste. Marie, during the year, will probably place a second steamship on the route in 1918.

The Public Works Department received tenders to Nov. 26, for the construction of a temporary pile protection breakwater in the Port Arthur District of Thunder Bay and Rainy River.

Four small boats, known as submarine chasers, and a trawler, all built at northern lake ports, passed through the Welland Canal, early in November, on their way to the Atlantic.

Chas. Millar, K.C., Toronto, who was one of the promoters of the Kenilworth race track at Windsor, Ont., is said to be promoting a ferry service from Brock St., Windsor, to Brush St., Detroit.

The masts having been removed from the wrecked s.s. George A. Marsh, which sank between Pigeon and Amherst Islands in Lake Ontario. Aug. 8, it is not now a menace to navigation. The hull lies in 85 ft. of water.

The barge Abyssinia, 2,037 tons, owned by Hutchinson & Co., Cleveland, Ohio, ran ashore on the Tecumseh reef on the Ontario shore of Lake Erie, recently, was badly damaged, and abandoned as a total loss. She carried a cargo of 15,000 bush. of wheat, and was valued at about $200,000. No insurance was carried.

The Montreal Transportation Co.'s barge Ungava is reported to have been sold to French interests. She was built at Collingwood in 1906, her dimensions being: length 200 ft., breadth 41 ft., depth 17 ft.; tonnage, 1,226 net tons.

The Great Lakes Transit Corporation's s.s. Northern Light, which was cut in two for taking to the Atlantic coast by way of the Welland canal, was passing through Lake Ontario during a severe storm at the end of October, in two parts, when the cable holding them, gave way, and half of the vessel went ashore near Point Breeze. One of the crew of 12 was drowned.

The Chicago Navigation Co.'s s.s. J. S. Dunham was sunk in collision with the Pittsburg Steamship Co.'s s.s. Robert Fulton, Nov. 5, near Grassy Island light in the Detroit River. Notice was issued Nov. 10, requiring master of vessels to reduce speed to bare steerway, in passing, while the raising of the vessel is in progress.

The western entrance to the harbor at Toronto was closed early in November for the balance of the season, in connection with the dredging work being carried out by the Canadian Stewart Co. Traffic has to enter the harbor by the eastern entrance, and the western entrance will only be open for use on such days as weather conditions prevent the use of the eastern entrance.

The U. S. Lake Survey reports the levels of the Great Lakes for October, in feet above mean sea level, as follows: Superior, 602.67; Michigan and Huron, 581.36; St. Clair, 575.77; Erie, 572.81; Ontario, 246.68. Compared with the average October levels for the past ten years, Superior was 0.01 ft. below; Michigan and Huron 0.96 above; Erie 0.74 ft. above, and Ontario 0.88 ft. above.

The Midland Transportation Co.'s barge Aloha foundered during a storm on Lake Ontario recently, and sank off Nine Mile Point, west of Kingston. The master was drowned, but the remainder of the crew were saved. She was in tow of the steam

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during September

ARTICLES			CANADIAN CANAL	U. S. CANAL	TOTAL
Flour	Eastbound	Barrels	514,020	690,920	1,204,940
Wheat	..	Bushels	9,933,784	24,781,060	34,714,844
Grain	..	Bushels	1,318,030	2,773,359	4,091,389
Copper	..	Short tons	42	10,428	10,470
Iron ore	..	Short tons	1,085,489	7,046,799	8,132,288
Pig iron	..	..	..	2,500	2,500
Lumber	.	M. ft. b.m.	,233	47,214	47,447
Stone	..	Short tons	..	..	..
General merchandise	..	Short tons	5,331	32,825	38,155
Passengers	..	Number	304	13	317
Flour	Westbound	Barrels	10	..	10
Grain	..	Bushels	..	3,960	3,960
Coal, hard	..	Short tons	22,500	335,139	357,639
Coal, soft	..	..	117,700	2,469,149	2,586,849
Iron ore	..	Short tons	..	1,013	1,013
Manufactured iron	..	Short tons	..	13,501	13,501
Salt	..	Barrels	8,729	67,167	75,896
Oil	..	Short tons	..	..	..
Stone	..	Short tons	..	..	..
General merchandise	..	Short tons	39,764	113,669	153,433
Passengers	..	Number	271	..	271
SUMMARY					
Vessel passages		Number	647	2,500	3,147
Registered tonnage		Net	1,366,223	7,616,659	8,758,400
Freight—Eastbound		Short tons	1,471,320	8,050,924	9,522,244
—Westbound		..	181,212	2,942,610	3,123,822
Total freight		..	1,652,532	10,993,534	12,646,066

tug C. W. Chamberlain, owned by the same company, with a cargo of coal from Erie, Pa. She was built at Mount Clemens, Mich., in 1888, her dimensions being, length 171,2 ft., breadth 32 ft., depth 12 ft.; tonnage, 517 register.

The wrecked s.s. Charles S. Price, which was lost in the great storm on Lake Huron, Nov. 9, 1913, is reported to have been sold by the underwriters to unstated Canadian parties, for $30,000, to be taken as she lies. The vessel was owned by the Mahoning Steamship Co., Cleveland, Ohio, and was discovered after the storm subsided, floating bottom upward. She subsequently sank, and several attempts were made to salve her, but all were abandoned, the last being by the Great Lakes Towing and Wrecking Co., in 1916.

British Columbia and Pacific Coast.

The British Yukon Navigation Co.'s s.s. Nasutlin left Dawson for White Horse, Oct. 21, thus closing navigation for the winter on the Yukon River.

The North Vancouver City Council is petitioning the Dominion Government to undertake immediately, the construction of a dry dock on the north shore of Burrard Inlet, as a government work.

The s.s. British Columbia, which sank at her moorings at Vancouver, Aug. 24, was raised Oct. 29, after two months work, and taken to the New England Fish Co.'s dock, where she was pumped out.

The C.P.R. s.s. Princess Mary was hauled out on the ways at Victoria, during November, and overhauled and repaired, after her collision with the s.s. Henriette. Some plates were replaced and others faired, and some frames and beams were straightened.

The steamships Santa Maria and Selma, which, as stated in our last issue, have been purchased from All Red Line Ltd., Vancouver, by the Union Steamship Co. of British Columbia, have had their names changed to Chilco and Chasina, respectively.

The Pacific Steamship Co. has announced that, owing to the requisitioning of its steamships Governor and President, by the U. S. Government for Hawaiian service, the winter service between San Francisco and British Columbia ports will be given by the steamships Admiral Schley and Queen.

The s.s. Quadra, which was owned formerly by the Dominion Government and operated along the Pacific coast as a lighthouse tender, is now running between Britannia Beach and Tacoma, with Capt. M. Carter as master. The Quadra was sunk in collision with the s.s. Charmer at the entrance to Nanaimo harbor, and was sold where she sank. She has been thoroughly overhauled and refitted for the ore trade.

The Grand Trunk Pacific Coast Steamship Co. has purchased the steam tug Lorne, from Alex. McDermott of Victoria. The vessel has been lying idle in Eagle Harbor for over three years. It was owned by the Puget Sound Tug Boat Co., and was wrecked in Sept., 1914, while on the way from Seattle, Wash., to Vancouver, towing the coal barge America. The hull was considerably damaged, and is being repaired, the machinery being intact.

Pacific Coast Coal Mines, Ltd., has built an extension wharf at Boat Harbor, Vancouver Island. It lies in the same direction as the older wharf and is separated from it by about 62 ft. It is 392 x 48 ft., the north side being protected by dolphins and the south side is equipped with a travelling chute connected with a conveyor with movable tripper. There is a depth of 33 ft. of water at low tide at the outer end of the extension, and 30 ft. on the south side.

The auxiliary powered schooners Esquimalt and Mabel Brown, built recently at Victoria and North Vancouver respectively, for Canada West Coast Navigation Co., are reported to have been sold to French interests and transferred to France. The Esquimalt was the third vessel of this type built by Cameron-Genoa Mills Shipbuilders Ltd., and completed her maiden voyage to Australia with lumber recently. The Mabel Brown was the first of this type, and was built at Wallace Shipyards, North Vancouver. She has also been to Australia with lumber.

Yarrows Ltd., Esquimalt, are reported to have received an order for another stern wheel steamboat for use in shallow waters in Asia. The company has already received orders for four of these vessels, two of which have been delivered, the other two being now under way. The hulls only are built are Esquimalt, and shipped in knockdown shape. The machinery is supplied by the parent concern in Glasgow, Scotland, and shipped direct. The latest vessel, it is stated, is to be used as an oil carrier, and will be 185 ft. long by 37 ft. beam.

The Empress of Ireland-Storstad Collission.—The appeal of the C.P.R. as owner of the s.s. Empress of Ireland, which was sunk by the s.s. Storstad, in the St. Lawrence, near Father Point, May 29, 1914, is before the Supreme Court of Canada. The Admiralty Court judgment was to the effect that as the accident occurred in Canadian waters, the amount realized by the sale of the s.s. Storstad should be divided pro rata amongst those who claim for loss of life. On behalf of the C.P.R., it is contended that the accident occurred beyond the three mile limit, in open sea, and therefore the distribution must be pro rata amongst all claimants, as provided under the British Merchant Shipping Act, and that if that point is not upheld, the fact that the s.s. Empress of Ireland was registered in Great Britain, would bring her under that act.

Food Saving on Steamships.—Representatives of 33 of the most important steamship lines, members of the American Steamship Association, have pledged themselves to assist the U.S. Food Administration in every way in the conservation of food. At a recent conference in New York resolutions were passed promising their co-operation and appointing committees to assist in prosecuting a vigorous campaign of saving and substitution. The steamship lines represented at the conference purchase an aggregate of $100,000,000 worth of food supplies each year.

The demand for shipping may be illustrated by the particulars of a recent transaction on the Atlantic coast. A sailing vessel, five years old, which originally cost $30,000, was purchased for $50,000 and chartered to carry 10,000 quintals of fish to the Mediterranean. The insurance on the vessel was 25%, and on the cargo 15%, and yet the vessel's freight on the outward voyage will pay for her and leave a profit of $5,000.

Common Sense About Concrete Ships.

Thanks to widespread publicity, there is today a great deal of talk about the concrete ship, despite the fact that the rosy expectations are pretty far ahead of present knowledge. One highly experimental ship of large tonnage is on the ways at San Francisco, a small, motor driven vessel is being built at Montreal, and several small ships have been built in Scandinavian countries. These represent the efforts of thoughtful engineers and business men to solve the tremendous problem of adapting concrete to the wracking and sudden strains of a ship at sea. Quite soon they and the committees appointed to investigate the question will be able to report the progress, or the hopelessness, as the case may be, of the concrete ship. Until then the future will be veiled behind theory and experiment. For some time, however, there must be an orderly development in the size of ships experimented upon. There is no more relation between a concrete rowboat or launch and the 3,000 ton, 15 knot freighter demanded in the present shipping crisis than there is between a toy airplane and a giant Caproni. Step by step up through the scow, the barge and the small framed and formed hull must progress be made to the hoped-for large vessel for ocean travel. This is the normal course of all engineering design. On account of these necessary intermediate steps, it seems as though there is at the present time a bigger field of practical work in the concrete barge for coastwise, river or canal trade. Here the gap between present knowledge and desired results is not so great and the possibility of immediate use is much nearer. If improved design and construction make such vessels seaworthy and permanent, as many of the early ones were not, some of the most serious problems of the big ship will be solved and at the same time some very necessary bottoms supplied.—Engineering News-Record.

The Military Service Act and Vessel Employes.—The carrying out of the Military Service Act, is interfering to some extent with the manning of vessels, especially in the coastwise trade. So far as vessels on the Great Lakes are concerned, any effect it may have will not be felt until the reopening of navigation, and in the meantime the tribunals are exercising their discretion in granting short exemptions so that a minimum of inconvenience will be caused. Instructions have been issued by the government that eligible men belonging to class 1, and medically classified as A2, must not be permitted to sign ships' articles. This applies to all men who had attained the age of 20 on Oct. 12, and who were born after Jan. 1, 1883, and who are unmarried, or widowers without children.

Amy Turner Shipping Co., Ltd., has been incorporated under the British Columbia Companies Act, with $60,000 authorized capital and office at Victoria, to acquire and operate the sailing ship Amy Turner, formerly owned by the Coastwise Steamship and Barge Co., together with all contracts and charters relating thereto, and with power to own and operate steam and other vessels of every description, and to carry on a general transportation business. The bark Amy Turner was built at Boston, Mass., in 1877, her dimensions being, length 174 ft., breadth 35.4 ft., depth 21.6 ft.; register tonnage 901.

United States Government Shipbuilding Etc.

The Emergency Fleet Corporation is reported to have placed a contract for thirty-six 3,500 ton ocean-going steamships with the American Shipbuilding Co. instead of with Robert Dollar. The construction of these boats will require about 1,165 tons of steel, or a total of near 42,000 tons of plates and shapes. They will be 261 ft. long and 42 ft. beam. The contract price is reported to be $700,000 for each ship, or a total of $25,200,000. Construction will be on the Great Lakes and deliveries will be made next July or August.

The U.S. Shipping Board has approved the building of twenty 4,000 ton "non-sinkable" ships by the French Government in the U. S. By so doing it has waived the rule that no foreign construction should be permitted at this time. The "non-sinkable" ship, developed by French experts, is said to have withstood torpedo attack in a test in which four shots were fired into the hull, and the only effect was to destroy the cargo immediately surrounding the point of attack.

The U. S. Shipping Board has agreed to charter to the Italian Government approximately 25 commandeered steel ships of an aggregate of 100,000 deadweight tons, to relieve Italy's shortage of shipping to transport urgently needed supplies. Great Britain has been supplying France and Italy with shipping to meet its emergency needs, but cannot continue to do so in view of increasing British shipping requirements.

A New York press report that an order had been given the Dominion Bridge Co., Montreal, for 50,000 tons of steel for use in building U. S. vessels has been confirmed by one of the company's officials, who is reported to have said: "The contract has been signed and prices are in every way satisfactory. Work on this contract will not keep the entire capacity of the Toronto and Montreal plants busy for ten months, as stated in the report from New York, although the plants will be kept busy for several months. Work on this order will in no way interfere with the contracts awarded recently and furthermore, the company is in a position to handle any new orders which are likely to be offering in the near future."

A readjustment of the organization of the Emergency Fleet Corporation went into effect on Nov. 12 by which several civilian engineers were given supervision of certain details of the federal shipbuilding construction programme. Charles Piez, President of the Ling-Belt Co., Chicago, has been appointed a vice president of the corporation, in charge of the actual construction of the new vessels. J. Heyworth, a Chicago contractor, has been placed in control of the wooden ship construction, and Chas. Day, of Day & Zimmerman, of Philadelphia, has gone to London to study the fabricated ship work in England and to apply the experience there to our problems. A. J. Meson, another Chicago engineer, has been detailed to field supervision of the various yards nnder the corporation's direction. A naval architect, Frank Kirby, of Detroit, has also joined the personnel.

A U.S. Shipping Board official is quoted as stating recently that, exclusive of about 2,500,000 tons of shipping under foreign contract which was commandeered on the stocks by the board and which will begin to come from the ways in ever-increasing numbers early in 1918, the contracts actually let, with the proviso that the vessels shall be completed by Dec. 31, 1918, are as follows: Fifty-eight composite ships of 207,000 tons; 345 steel ships of 2,665,400 tons; 778 wooden ships of 1,330,900 tons. The total of new ships contracted for to be delivered by Jan. 1, 1919, is 4,203,300 tons. The 4,203,000 tons of new shipping actually contracted for and the 2,500,000 tons commandeered and now being rushed to completion, gives a grand total of 6,703,300 tons which will be assured before Jan. 1, 1919, if all interests co-operate in a patriotic endeavor to defeat Germany's most dangerous weapon, the submarine.

The U. S. Shipping Board has decided that from the ships completed or about to be completed in U. S. yards, that have been commandeered by the government 10 will be turned over to the French Government, for the transportation of supplies to France and that 10 additional ships outside of those under construction in U.S. yards will also be allotted to France for the same purpose. In selecting the 20 preference will be given to ships originally contracted for on the Great Lakes by French interests and by the Cunard Co.

The U.S. Shipping Board has instructed its Director of Operations to take charge on its behalf of all ships building for foreign account in U.S. yards, which were subject to commandeering order of the Fleet Corporation of Aug. 3, 1917 (except those heretofore ordered surrendered to their owners), as fast as the same are completed, and proceed to operate them on behalf of the Shipping Board, and that the same instructions be given as to all ships building for U.S. owners who decline to accept their ships on the terms offered by the Fleet Corporation and the board.

Chairman Hurley, of the U.S. Shipping Board, announced recently that work on the wooden ship programme is progressing as rapidly as possible. In an effort to develop and bring into action all the resources of the steel shipbuilding yards so as to get all the ships that will be available in the shortest possible time, the members of the Atlantic Coast Steel Shipbuilders' Association met in Washington recently to discuss a plan of action. The outstanding fact of the conference is that of co-operation on a plan for the early completion of ships which at the present time are so greatly needed. In addressing the meeting Mr. Hurley said: "This meeting has been called for the single purpose of establishing a new goal for our expectations. Between now and March 1 this country will turn out approximately 1,000,000 tons of ships, deadweight. In the whole of 1916 we turned out a little over 750,000. Thus we will achieve in four months far more than we achieved previously in twelve months. Conservatively stated, we have quadrupled our output. The new goal of our expectations is 10 times the production of 1916. Owing to the situation in Italy, Mr. Hurley announced, preference will be given the Italian Government in regard to relief ships and the work will be pushed in order that it may have them as soon as possible.

The s.s. Bellechasse has replaced the s.s. Champlain on the ferry service between Murray Bay and Riviere Ouelle, the latter being laid up at Quebec for overhaul and repair.

Wreck Commissioner's Investigations and Judgements.

Sinking of s.s. Albert Y. Gowen.

Investigation at Quebec, Oct. 26, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. F. Nash and C. Lapierre, as nautical assessors, into sinking of U.S. s.s. Albert Y. Gowen, while moored in the Louise Basin, Quebec, Aug. 28. The court found that the master, Eugene Fortin, was in default for gross negligence in supervision of property entrusted to his care, and suspended his certificate for six months from Oct. 31. The chief cause of the sinking appeared to be that the starboard shoulder, or bow, of the vessel, caught underneath one of the longitudinal or horizontal timbers extending from the face of the wharf with the rising tide, thus causing her to list until the water entered through the ports into the hold. The master did not remain on board himself, or provide proper watchmen, as he should have done.

Tunisie-Cabotia Collision.

Investigation held at Montreal, Oct. 30, into collision between Belgian relief ship Tunisie and Canada Shipping Co.'s s.s. Cabotia, near Windmill Point, Montreal, Oct. 28. Capt. L. A. Demers, Dominion Wreck Commissioner presided, and was assisted by Capts. F. Nash and C. Lapierre as nautical assessors. The court exonerated the master and officers of the s.s. Tunisie from all blame for the casualty, they having complied with the rules and regulations governing the case. The court considered the master of the s.s. Cabotia, Robert Laing, was needlessly daring and showed bad judgment and recklessness. He also violated the Port of Montreal bylaws in obstructing navigation. It therefore suspended his certificate for six months from Nov. 10.

Turning Vessels at Fort William.—An order in council has been passed cancelling sec. 15 and sec 15a of the regulations governing Fort William, Ont., harbor, and substituting the following sec. 15: "Any steam vessel not exceeding 200 tons gross, or in the case of a package freighter, not exceeding 275 ft. in length, may turn in any part of the Kaministikwia River, under her own power; any vessel exceeding 200 tons gross, but not exceeding 260 ft. in length, or in the case of a package freighter not exceeding 330 ft. in length, may be turned with a tug in that section of the river lying between the bend above C.P.R. elevator D, and the westerly limit of the Grand Trunk Pacific Ry. wharf, and may also turn in that section of the river between C.P.R. slip 1 and elevator C, but in the latter place turning must not take place without the use of a tug, unless sanctioned by the harbor master. All other vessels must turn in the turning basin at the head of the McKellar channel."

Newfoundland's Shipping Increases.—The shipping losses sustained by Newfoundland through storms and the effects of war, including raiders, submarines and mines, have been more than made up by building within the colony, and purchases abroad. It is estimated that the colony has sufficient capacity of sailing vessels to take the entire catch of cod to foreign markets in native bottoms. This is exclusive of sailing vessels engaged in purely local trade.

The Plunkett Navigation Co., Ltd., has changed its head office from Cobourg, Ont., to 118 Board of Trade Bldg., Montreal.

Regulations Respecting Vessels' Lights.

An order in council has been passed adding paragraph 22A to the Defence of Canada Order, 1917, as follows:

The masters of all vessels shall comply with the following orders regarding ships' lights—

1. Anchor lights.—No electrically lit lanterns shall be employed by any vessel as anchor lights. The normal brilliancy of all other anchor lanterns shall be reduced by 50%.

2. Bow and steaming lights.—Vessels shall not use electrically lit lanterns as bow or steaming lights in the vicinity of any harbor.

3. Other lights.—No lights visible from outboard, either afloat, on deck or below, except those required by the Regulations for the Prevention of Collisions at Sea, and such as may be necessary for authorizing signalling purposes, shall be used on any vessel. This shall apply to all vessels whether under way or at anchor.

4. The above orders shall apply to all vessels of every description, other than H.M. ships, within the waters of the east coast of Canada and extending up the St. Lawrence as far as the port of Quebec.

5. Vessels carrying volatile oil, or spirits in bulk, shall exhibit, in lieu of oil lamps, electrically lit lanterns, not exceeding in brilliancy 50% of the brilliancy of the normal oil lamps.

British Government Control of Shipping.

From the commencement of the war the British Government has steadily been requisitioning vessels of all classes, and operating them in the national interest. The rate paid to the owners soon became very much lower than the freights earned by free ships, and British shipowners, therefore, were unable to rely on earning the same freights as their competitors. It therefore became necessary recently for the government to take complete control of all British shipping in order to ensure the employment of every vessel in the manner and on the terms as to rate of freight, most consistent with the national interests.

With the exception of a few vessels engaged in distant waters on work of importance for British Dominions, and of vessels chartered to France and Italy, the British Government has requisitioned for hire at government rates, about 97% of the ocean going tramp steamships on the register of the United Kingdom. All British liners have been requisitioned and are being operated on government account, the owners receiving hire at government rates, and the profits derived from private freight carried at market rates go to the government and not to the shipowners. Every ocean going voyage of British steamships is directed by the government, which has regard only to the question of how to obtain essential imports from the nearest source, and disregards both the interests of the shipowner and the exporter. Many trades built up in distant waters and sustained by British industry, have had to be abandoned to neutral owners, who have gladly sought employment for their vessels in waters immune from war risk.

The coasting traffic of the United Kingdom has been under review for the purpose of withdrawing vessels which can be used for ocean going service, and of bringing about a limitation of rates wherever possible. Vessel owners have placed all their organizations and resources at the government's disposal for running the requisitioned vessels, and have also agreed to pool their organizations, thus necessitating the closest co-operation between what may have been competitive interests before the war.

It should also be borne in mind that the officers and crews of merchant vessels have run, and are running extraordinary risks in the operation of their vessels. The areas round the British Isles have been singled out by the enemy for special attacks, but officers and crews have not made any difficulty about taking their vessels through the most dangerous routes.

Of necessity, British imports have been severely curtailed. Prior to the war the British imports averaged about 58,000,000 tons a year; in 1916 they fell to about 43,000,000 tons, and in 1917 they will be considerably less. Of the amount imported before the war, rather less than 25% consisted of food stuffs, while in 1916 nearly 70% of the imports consisted of food stuffs and munitions, the balance in each case being of an industry productive nature. In 1913 the British imports were valued at £769,000,000, of which about £94,000,000 were from countries with which we are now at war. In 1916, the imports were valued at £949,000,000, enemy countries of course now being eliminated. In 1913, the United Kingdom exported goods to the value of £525,000,000, and in 1916, £506,000,000, but, it is stated, that if the 1916 exports were valued on the same basis as those of 1913, the amount would be only £386,000,000.

Mainly About Marine People.

John Laxton has been re-appointed a member of the Toronto Harbor Commission for three years.

Capt. B. F. Hayes, R.N.R., commander of the White Star s.s. Olympic, has been created a Companion of the Order of St. Michael and St. George.

H. C. DeWolf, formerly with the Furness Steamship Lines, Halifax, N.S., has been appointed chief election clerk for the ensuing Dominion elections.

A. R. Tibbits, technical officer, St. Lawrence ship channel staff, is stated in an Ottawa press dispatch as about to be appointed Assistant Deputy Minister of Marine.

J. M. Pouliot, Secretary, Gaspe and Baie des Chaleurs Steamship Co., Quebec, Que., was drowned there Oct. 30, when he fell from the gangway running from the company's s.s. Gaspesien to the wharf.

John A. Westaway, who died at Amherstburg, Ont., Nov. 11, aged 80, was for about 40 years, Superintendent of Car Ferries at Windsor, Ont., for the G.T.R. and its predecessor the Great Western Ry.

Capt. J. J. Murchison, heretofore master of the car ferry steamship Prince Edward Island, has been appointed dock master and port superintendent at Port Borden, the Prince Edward Island terminal of the car ferry service.

Capt. Wm. McNeill, whose death at Glasgow, Scotland, was Nov. 21, was master of the Anchor-Donaldson Line s.s. Letitia. He had been master of various vessels owned by the Donaldson Line for about 24 years, and was well known at Canadian Atlantic ports.

Capt. John L. Read, who took the Canadian icebreaking steamships J. D. Hazen and Minto to Russia, after they were purchased by the Russian Government, has been appointed to the car ferry Prince Edward Island, operating between Cape Tormentine, N.B., and Port Borden, P. E. I.

W. J. Stephens, a well known shipbuilder on the Pacific coast, has been appointed a Lloyd's surveyor for the port of Victoria, B.C. He has charge of the surveying of the nine wooden steamships under construction at the two yards at Victoria, and of any other vessels building there, which may seek Lloyd's registry.

J. French, of New York, Chief Surveyor for Lloyd's Register, for Canada and the United States, accompanied by H. A. Ruck-Kenne, M.I.C.E., Assistant to the Chief Engineer, Lloyd's Register, London, Eng., made a tour of the various shipbuilding yards in British Columbia recently.

Hon. J. D. Hazen, K.C., Minister of Marine and Fisheries, who retired from that position on the formation of the Union Government recently, has been appointed Chief Justice of the Appeal Division of the Supreme Court of New Brunswick, and Judge of the Chancery Division of that court and of the Admiralty Court.

Capt. G. C. McKeen, who died at Vancouver, B.C., Nov. 12, had been associated with the scow coasting trade for about 30 years, as a partner of McKeen and Wilson. He was a native of Cape Breton, N.S., where he built the s.s. Native, which he ran for several years. He was connected with the Shipmasters' Association of British Columbia, of which he was president for some time.

Lincoln Smith, whose resignation as Assistant to Manager, British Columbia Coast Steamships, C.P.R., Victoria, was reported in our last issue, was presented with a rosewood clock and two pieces of silver plate, by the department's officers and employes, Oct. 31. He has taken up the position of Managing Director, Peter McQuade & Sons, ships chandlers, Victoria.

Harry F. Bradley, who was appointed Assistant General Passenger Agent, Canadian Pacific Ocean Services, Ltd., Montreal, recently, was born at Waterville, Que., July 20, 1876, and entered transportation service in 1898, since when he has been, to 1906, in various positions in the Passenger Department, Montreal; 1905 to 1912, General Agent, Toronto; 1912 to July 15, 1917, Manager, Passenger Department, all with H. & A. Allan, General Agents, Allan Line Steamship Co.

George Hicks, who died in England recently, is mentioned in some marine papers, as the originator of the Manchester Ship Canal, connecting Manchester with tidewater in the River Mersey, at Eastham, near Liverpool. While giving him all the credit for whatever share he took in arousing public sentiment in the matter, it would be a mistake to state that he was the originator of the canal as it exists. The question of making the canal was publicly discussed in Manchester in 1841, long before Mr. Hicks was interested in matters of that kind. Nothing was, however, done in the matter until 1881, when he and Hamilton Fulton, C.E., laid a scheme for a canal before the Manchester Chamber of Commerce. This scheme provided for a very deep channel from tidewater to Manchester, to allow of the tide rising the whole way, and was rejected as not feasible, and nothing was done until the following year, when the plans of E. Leader Williams, later Sir Leader Williams, were accepted, and eventually carried out.

Transfer Restriction of British Ships.

Following similar regulations regarding the restriction of the transfer of British ships, put into force by the British Government, a Dominion order in council has been passed extending a previous order in council dated Mar. 9, 1915, so as to apply to mortgages, transfers of mortgages, etc., of ships, made after Aug. 10, 1916, of foreign controlled companies, to persons not qualified to own a British ship. A foreign controlled company is described as follows—where the majority of directors, or persons occupying the positions of directors, by whatever name called, are not British subjects; where the majority of voting power is in the hands of persons who are not British subjects, or who exercise their voting powers directly or indirectly on behalf of persons who are not British subjects; where the control is by any other means whatever, in the hands of persons who are not British subjects, or where the executive is a foreign controlled company, or where the majority of the executive are appointed by a foreign controlled company. A corporation shall not be deemed to be a British subject unless it is established in and subject to the laws of some part of His Majesty's Dominions, or some British Protectorate, with its principal place of business therein.

The Minister of Marine may require any person who is the owner or mortgagee of a British ship, or who applies to be registered as owner or mortgagee, to furnish such particulars as may be necessary to ascertain whether he is trustee for, or represents a foreign controlled company, and if he fails to supply such particulars, he shall be guilty of a misdemeanor. Where, after the passing of this order, the owner or mortgagee ceases to be a British subject or becomes a foreign controlled company, the ship, or the interest in the mortgages, shall be subject to forfeiture, unless the written permission of the Minister has been granted to permit the change.

The regulations are to be in effect during the continuance of the war and for three years thereafter.

U. S. Regulations Respecting Coasting Privileges.—The bill passed by the House of Representativees and Senate covering the changes in the U. S. coasting regulations, provides that during the war, and for 120 days thereafter, the U. S. Shipping Board may suspend the existing provisions and permit vessels of foreign registry, and foreign built vessels of U. S. registry, to engage in the coastwise trade of the U. S., provided that no such vessel shall so engage in the trade unless a permit issued by the Shipping Board, defining the scope of trade and the time of such employments shall have been obtained, and that such permits shall give preference to vessels of foreign registry leased or chartered by U. S. citizens or corporations, and that this act shall not apply to the coastwise trade with Alaska or between Alaskan ports. The U. S. Shipping Board has issued several permits for foreign registered and foreign built vessels to engage in the trade.

Ferro-Concrete Vessels.—During the last few months Lloyd's Register of Shipping Committee has approved plans for the construction in ferro-concrete of a number of non propelled barges, some designed to carry 500 tons deadweight, and also of a motor vessel. These vessels will be built in the United Kingdom and in Norway, under the inspection of the society's surveyors, and are intended for the British and Scandinavian coastal trade. Plans of other ferro-concrete vessels of larger carrying capacity for certain sea trades are at present under consideration. One of the society's principal surveyors made a tour of inspection recently in Scandinavia, where, owing to circumstances arising from the war and other causes, the use of ferro-concrete for ship construction has so far been developed, and the report of his visit has placed the committee in possession of valuable data on the subject.

Surplus Stores on Ocean Steamships.—An employe of Canadian Pacific Ocean Services, Ltd., was convicted at Liverpool, Eng., recently, of stealing certain stores the property of his employers, and fined £3 or 21 days imprisonment. His defence was that he had saved the articles from his stores and he thought he was entitled to the surplus. A similar case was dealt with there some time ago, when in the course of the evidence it transpired that a custom had grown up of storekeepers, or stewards, taking to their homes, or otherwise disposing of, stores which they claimed had been saved from the allowances made for use on the voyage. It was clearly stated then that the stores were issued for use on the voyage, and if they were not used, the surplus belonged to the company.

Dominion Government Atlantic-Pacific Service.—The Manchester, Eng., Guardian, of recent date, states that "it is not improbable that the Canadian Government will, after the war, establish state cargo services both on the Atlantic and Pacific." The Dominion Government has already announced its intention of placing vessels in freight cargo service from the Pacific to the Atlantic coasts, via the Panama Canal, and proposed to place contracts for the building of two vessels for this purpose. These however are suspended for the present. As for state cargo services operating on the Atlantic and Pacific Oceans, there is no immediate prospect of the government engaging in transoceanic service.

Welland Canal Lock Gate Accident.—The Bay State Fishing Co.'s trawler Spray, a small vessel of about 96 tons, while passing through the Welland Canal, downbound, Nov. 5, collided with the heel path foot gate of lock 9, badly damaging the gate, which had to be replaced by a spare one. This occurred at 4.30 p.m., and navigation was resumed at midnight, the damage being estimated at $1,000. The cause of the accident, as given, is that the vessel's engines went ahead when the master states his signal was to reverse. The report that damage was caused to lock gates on the canal, by the s.s. War Beaver, while on its way to the coast, as mentioned in press reports, is incorrect.

Manchester Liners, Ltd.—The report for the financial year completed recently shows a trading profit after allowing for depreciation and excess profits, taxes, of £174,177, in addition to £20,176 brought forward from the previous year. After paying debentures, interest, fees and preferred dividend of 5%, a dividend has been paid on the ordinary shares of 10% and a bonus of 15%, free of income tax. Of the balance, £100,000 is placed to reserve account, £5,564 to debenture reserve account and £14,118 carried forward to the next year's accounts.

Limiting Shipbuilding Bounty. — The Newfoundland Government has announced its intention of introducing a bill at the next session of the Legislature, to limit the class of vessels entitled to bounty under the Shipbuilding Bounty Law. Hereafter, it is intended that bounty will be payable on vessels not exceeding 120 tons gross measurement, and vessels exceeding 120 tons gross will not qualify for any bounty whatever. The existing regulations will apply to all vessels of which the keel had been laid at Oct. 19, but all vessels the keels of which were not laid at that date, are to come within the scope of the proposed new regulations.

The British Government has requisitioned four Swedish steamships which were in British ports, in order to protect British capital invested in the vessels, a German prize court having decided that notwithstanding that the vessels were sailing under a neutral flag, they were to be treated as British vessels. The owners are being compensated by the British Government. It is stated that other vessels in which British capital is invested, though operated under a neutral flag, will also be requisitioned on a similar basis.

Dominion Marine Corporation, Ltd., has been incorporated under the Dominion Companies Act, with $1,500,000 authorized capital, and office at Montreal, to carry on the business of the transportation of passengers, mail and freight, by land and water, and to undertake towing, wrecking and salvage in all its branches, and in connection therewith to own and operate steam and other vessels of all kinds, wharves, docks, piers, warehouses, shipbuilding yards, etc.

"Without a Trace."—The British Civil Lord of the Admiralty announced in the House of Lords recently that in the three years ended Oct. 31, 122 vessels had been lost without leaving any trace. In normal times, the average of such losses was about 15 a year. As intercepted German messages have proved that instructions were given to sink as many vessels as possible, "without leaving a trace," it is presumed that these losses are almost entirely due to enemy attack.

U.S. Shipbuilders have launched recently four steel steamships of the "War" series" at Great Lakes ports. The War Banner, said to be the first trans-Atlantic freight steamship to be built in the U.S. for British register, at South Chicago, Ill.; the War Finch at Cleveland, Ohio; the War Beaver at Detroit, Mich.; and the War Signal at Superior, Wis.

The Transpacific Navigation Co., Ltd., has been incorporated under the British Columbia Companies Act, with $100,000 authorized capital and office at Vancouver, to own and operate steam and other vessels of every description, and to carry on a general steamship owning and operating business.

The Hamburg - American Steamship Co.'s offices at New York, have been seized, together with all equipment and fixtures, and all other property of the company located on the premises, on behalf of the U. S. Government. It is said that the offices will be used by the U.S. War Trade Board.

Foreign Tugs in Canadian Waters.—An order in council has been passed authorizing the Minister of Customs to issue licenses permitting foreign tugs to be chartered for use in Canadian waters without payment of customs duties, during the war.

The Marine Navigation Co. of Canada, Ltd., has had its authorized capital stock increased by supplementary letters patent under the Dominion Companies Act, from $50,000 to $1,000,000.

Standardized Shipbuilding in Great Britain.

The commissioning of the first unit of the British Government's programme of standardized shipbuilding, and the launch by the King at Greenock recently of "a vessel of a new type, designed for merchant service," were events which, but for the restrictions imposed by the war, would have given occasion for wide discussion. In present circumstances, however, nothing can be said about the methods which are being adopted to render these vessels as immune as possible from being sunk by torpedoes or mines; but much may be said, that in no sense do they represent any radical departure from previous practice in naval architecture. They are ordinary cargo carriers, similar in general design to many that were built in previous years, capable of taking their place in the British mercantile marine after the war is over. But they embody in their fitting out many new ideas, each representing an effort to beat the enemy submarines by defensive or offensive methods, and all combining to make them more safe in this respect than any cargo vessels have been since the war began.

It is realized that safety is not to be found in any single specific, but in a combination of ideas each of which has either been proved valuable by experience or promises well in theory. In this respect the standard ships represent a bundle of compromises, while in the matter of hull designs they represent the elimination of variety, and the reduction of plans to a level of uniformity which should enable tonnage to be produced more rapidly than ever it has been produced in the past. The fact that hull designs have been standardized, and not revolutionized, is not a little significant. It shows that those responsible for the scheme have discarded the many suggestions for "unsinkable" ships and placed their confidence in that which experience had proved to be good, supplemented by all the expedients for increasing safety which could be adopted with hope of success, and without making each vessel other than a good seaworthy and efficient cargo carrier.

This is a point which must always be remembered when the merits of the scheme of standardized shipbuilding are considered. There have been very few rash experiments in British shipbuilding. An occasional freak boat has been constructed, but as a whole the history of British shipbuilding is a story of great restraint and scientific conservatism, of the development of theories to the point when their success is assured before they are put into actual practice, and of preliminary experiments so conclusive that there was no danger of failure when actual vessels were produced. It was largely this innate conservatism that prevented the adoption of revolutionary ideas in the standard ships. The Shipping Controller's advisory committee declined to rely on untested theories when the demands of the war were calling for the largest possible supply of efficient cargo tonnage, and they therefore decided that a large number of vessels of thoroughly dependable types should be built—types which would not only do a known amount of work after being commissioned, but with the construction of which all shipbuilders and marine engineers were familiar, and which could, therefore, be turned out rapidly once the standardized programme was fairly set going. The time was seen not to be one for experimenting with vessels the value of which was an unknown quantity, and therefore all the proposals for revolutionary plans were turned down, and cargo steamers in three classes, propelled not by turbines or internal combustion engines, but by ordinary reciprocating engines, were ordered and are now being constructed at many of the shipyards in the United Kingdom. This is a remarkable illustration of that conservatism in methods to which reference has been made, and of that safe policy which looks like want of enterprise, but which so frequently proves wisest in the long run. It is a policy of safe progress, and its best justification is to be found in the story of British shipbuilding and marine engineering.

Now the idea of an unsinkable, or practically unsinkable, ship is being recommended, and the Admiralty and the Ministry of Shipping are being criticized because they decline to do more than express a favorable opinion on the plans put before them. Whatever the merits of these plans, their adoption would mean an interruption of the standardized programme. It is, in all probability, purely a matter of what may be called tactics. Now that the standard programme is fully under way the stage is presumably seen approaching when it will act as an effective setoff to the enemy submarine campaign; hence it is not considered wise to make another new beginning, especially with a scheme which is bound to be experimental in its early stages.

As to the unsinkable ship as such, it is an old will-o'-the-wisp, which many good men have followed, but which no one has yet caught. It would be quite possible to construct something which would continue to float for a very much longer time than anything at present in existence, and that in spite of very serious attacks by mines, submarines or gunfire. It might even float until it was wholly destroyed. But it would not be a ship, because it would be of little or no value as a ship. Take, for example, the question of internal subdivision. By means of extreme subdivision—many transverse and longitudinal bulkheads carried up to or above the main deck, and with no openings leading from one compartment to another—the buoyancy of a ship might be preserved after she had been attacked many times; but the amount of subdivision necessary to make her even relatively safe would make her useless as a ship. Numerous bulkheads without openings, the only communications between the compartments being by the top decks, would render her very difficult to work, while with many small compartments her cargo could not be handled expeditiously, and she would represent the very opposite of that clear-hold type which is so efficient and economical, and toward which the designers of cargo steamers have been working for many years past.

Again, all forms of outside protection, such as screens after the fashion of the old time torpedo nets around warships, are open to the unanswerable objection that they would enormously reduce the speed and the steering and manoeuvring power of any vessel to which they were attached. The latest idea from America, that each transport crossing the Atlantic should carry along each of her sides, at some distance off, a wall of steel plates, so that she would be sailing all the time within these walls, is the torpedo net carried to its extreme limits, and it is open to the same objections, but to a much greater extent.

The simple fact is that a ship must be a ship first and foremost, and any alteration in design, or any protective device, which detracts from her value and efficiency as a ship is ruled out by that fact. The true line of progress is that on which we are moving—that of maintaining efficiency and also utilizing every plan which assists in defying the enemy without spoiling the ship as a ship.—Times, London, Eng., Engineering Supplement.

The United States Consul at Glasgow, Scotland, reported recently as follows: The first of the standardized ships built under the British Government's specifications has completed its final tests, and has been put into commission as a cargo carrier. In every respect the trial proved an unqualified success. It was of a most exhaustive and comprehensive nature, and the experts who were aboard were unanimous in their praise of the ship, which marks a new epoch in Great Britain's maritime history. A choppy sea and rain squalls prevailed during the trials, but these conditions served only to enhance the steadiness and seaworthiness of the craft.

The standardized vessel was designed with the idea of providing a good type of cargo carrier in the shortest possible time, with the minimum expenditure of material, having regard to war conditions which involve the question of speed. The keel was laid in Feb., 1917, and on Aug. 25, 1917, the first ship was fully loaded and ready to proceed on its maiden voyage.

In reality there are two types of standardized vessels of 8,000 tons deadweight carrying capacity. These are classified as A and B—single-deck and double-deck ships. The first one is of class A. It is said that the government intends also to construct two smaller types—class C, of 5,000 tons deadweight, and class D, of 3,000 tons. Other types are said to be under consideration. The machinery and engines, as well as the hull, are standardized, so that the first engine goes into the hull complete. Special attention has been devoted to the question of speed, with a view to attaining the maximum number of knots. Features of the general equipment are the very large hatchways, which make the ship as nearly self trimming as possible. This greatly facilitates loading and discharging. In fact, the central idea is that such vessels not only should be built quickly, but also should be capable of being worked economically and speedily.

The accommodations provided for the crew have been given the closest attention, with the result that the provision made marks a big advance as compared with sailors' quarters in ordinary cargo steamers, and particularly those of the tramp class. The crew are berthed aft in the poop, instead of in the forecastle, as has been the general rule hitherto, and separate apartments are provided, each fitted with two berths. Messing quarters are entirely separated from the sleeping compartments, a smoking room is provided for general use, and there is steam heat in the men's quarters. There is also a bathroom for the crew.

Marine Navigation Co., Ltd.. a Canadian company, is reported to have purchased the sailing vessel Juteopolis built at Dundee, Scotland, in 1891. She was owned by G. Windrum & Co., and is 2,652 net tons.

The Canadian Pacific Railway's Relations with Austria.

The statement made recently that C.P. R. observation cars were being used as hospital cars by the enemy in Austria, brings to mind the part played by the C. P. R. before the war, and which, looking at it in the light of later events, may be considered almost as skirmishing tactics preliminary to the declaration of war. For a number of years steamship traffic to and from the European continent, was practically controlled by the Germans, and this control was specially marked in the case of American tourist traffic to the German and Austrian baths and mountains. Almost the whole of the American traffic to the Austrian Tyrol passed through German hands to the detriment of the Austrians, and the Austrian State Railways suffered. In order to remedy this state of affairs, the Austrian Government entered into contracts with the C.P.R., first for the supply and operation of a number of specially constructed observation cars on the more picturesque sections of the State Railways through the Austrian Alps, and by arrangement with the Swiss Government, to Zurich. A special car was designed, following on the design adopted in this country, but modified in certain particulars to suit the requirements of continental railway operation, and several were built, to plans prepared by the C.P.R., at the Nesseldorf works in Austria. The arrangements for this were made by H. H. Vaughan, then Assistant to the Vice President, C.P.R., who visited Austria for the purpose. The service was first operated during the summer of 1912, between Zurich and Innsbruck, Vienna and Innsbruck, and Salzburg and Trieste, under the supervision of G. McL. Brown, European Manager, C.P.R., London, Eng.

It was felt later that Austria was not getting its fair share of the continental traffic going from America, owing to the alleged Hamburg - American Steamship Co.'s control of the North Atlantic Conference, which allocated certain percentages of the traffic to certain companies, and consequently to certain ports. The Austrian Government then arranged with the C.P.R. for the inauguration of a steamship service between Canada and Trieste, with a call at Naples, Italy. This service was commenced in March, 1913, the C.P.R. steamships Lake Champlain and Lake Erie being used, and renamed Ruthenia and Tyrolia. On the inauguration of the new service, it was announced from Berlin that the North Atlantic Conference would oppose it by placing a competitive service on the same route, and the Austro-Americana Line was formed to run between Canada and Trieste, calling at Patras, Greece and other Mediterranean ports.

At a meeting of the North Atlantic Conference, which was attended by G. McL. Brown, European Manager, C.P.R., it was demanded that the C.P.R. surrender its contract with the Austrian Government and pay a default, and naturally this was refused. Later the C.P.R. withdrew from the conference entirely, and as a consequence all agreements for the pooling of continental business came to an end. Immediately following the withdrawal of the C. P. R. from the conference, its Austrian agent was arrested and its Austrian offices were closed. There is not the slightest doubt that these actions were carried out at the instigation of the German authorities, acting through the Hamburg-American Steamship Co., with the intention of driving the C.P.R. out of the continental business. The C. P. R. agent was subsequently released and certain of the offices opened, the business done being considerably restricted. Action was however maintained against S. Altman, Agent, C.P.R., for breaches of the emigration act, it being alleged that by degrees the country was being depleted of men of military age, and that the C.P.R. agent aided and abetted such men in evading the provisions of the emigration act. On this account the C.P.R. withdrew its steamship service between Canada and Austria, and placed the vessels on another route. G. McL. Brown, European Manager, C.P.R., spent a considerable time on the continent, during the various disputes with the North Atlantic Conference, and only closed up matters shortly before the outbreak of war in Aug. 1914. After war was declared between Great Britain and Austria, which was at a later date than the German break, all C.P.R. property in Austria was seized, and the local staff interned.

The Welland Ship Canal and the War.

The United States Shipping Board is reported to be considering an appeal to the Dominion Government to push to an early completion the construction of the Welland Ship Canal, on the ground that such construction would not only divert the great bulk of the Great Lakes tonnage to the coastwise trade during the winter when lake navigation is closed, but would make possible the utilization of the large shipbuilding facilities on the lakes without the necessity of cutting vessels in two in order to get them to the ocean.

In carrying out its policy of not expending money on large public works not immediately connected with war services, the Dominion Government suspended all work on the construction of the Welland Ship Canal, and dispersed the staffs on May 2 last. At the time, contracts were running for sections 1, 2, 3, and 5, and the work taken as a whole was rather over 50% completed; that on sec. 3, the heaviest on the whole route, not being in so forward a state as on the other sections. The contract called for completion of this section by April 1, 1917, but owing to labor and other difficulties, it was estimated that it was about 12 months behind time. The time for the completion of sec. 5 was fixed for April 1, 1918, so that the completion of all the heavy work on the construction of the canal might have been looked for during 1918, and possibly the completion of the whole of the canal as well, as the balance of the work is of a comparatively light nature. To do this, however, the work would have to be rushed from end to end with a full force of men, and undertaken as a war work of the utmost necessity. There is a large amount of alien labor in Canada, most of which is engaged on work of considerably less importance than this, and which could be transferred with little difficulty. Apart from this, if the work is allowed to stand for any great length of time, there is bound to be a serious deterioration and consequent loss, and even if it were taken up again at once, there would be some difficulty in reassembling plant and staffs, as in some cases, plant, which was of a more or less special character, was sold, or transferred to other points.

No doubt the cessation of the work was ordered in good faith, it never being contemplated that it would be required as a link of very great importance in connection with the carrying of the war to a successful conclusion. The fact, however, remains that had the canal been complete and ready for service, it would have assumed an importance of such a nature, as a means, not only for the quick transfer of the larger lake vessels to the ocean, but also for the complete and beneficial utilization of the lake shipbuilding yards for the construction of larger and more useful vessels than is now possible there, owing to the delays necessary for the cutting of the larger vessels in two on the lakes and rejoining them on the St. Lawrence.

United States Government Rates for Requisitioned Steamships.

Following are particulars of the rates which the United States Shipping Board is paying for vessels which it has requisitioned for ocean service, under government form time charters:

Cargo Boats and Tankers.

Over 10,000 tons	d.w. capacity,	$5.75 per d.w. ton.
8,001 to 10,000	"	6.00 "
6,001 to 8,000	"	6.25 "
4,001 to 6,000	"	6.50 "
3,001 to 4,000	"	6.75 "
2,500 to 3,000	"	7.00 "

Vessels of speed in excess of 11 knots are allowed 50c a ton dead-weight per month for each knot or part of a knot over 11 knots.

For passenger steamships the board adopted a two fold basis of classification, Class A consisting of steamships with a capacity of over 150 passengers, and Class B consisting of steamships with a capacity of from 75 to 150 passengers. Steamships falling in both classes are further classified according to speed. The rates for passenger steamships are as follows:

Class A.

10 to 11 knots	$9.00 a ton gross register
12 "	9.50 "
13 "	10.00 "
14 "	10.50 "
15 "	11.00 "
Over 15 "	11.50 "

Class B.

10 to 11 knots	8.00 a ton gross register
12 "	8.50 "
13 "	9.00 "
14 "	9.50 "
15 "	10.00 "
Over 15 "	10.50 "

The foregoing rates became operative Oct. 15. The vessels embraced in the requisition, except in so far as actually required for government service, will be left in the hands of the present owners to be operated for government account, but subject at all times to such dispositions as the board may direct. A certain number of the requisitioned vessels which are required for the continuing and exclusive service of the navy and army, will be taken over on a bare ship basis. The rate of hire on this basis has been fixed by the board at $4.15 per deadweight ton for cargo boats, and $5.75 per ton gross for passenger steamships of 11 knots speed, with an additional allowance of 50c per ton for each knot in excess of 11 and up to 16. All the foregoing rates are tentative. The board will carefully examine the results of operation under the requisition rates, and from the results, as certified by expert examiners, will determine upon such revision as fair and equitable treatment of the owners of the requisitioned vessels may require. Revisions will be made, if reasons therefore are found to exist, at intervals of not more than 90 days. As to insurance, the government assumes the war risk, and in some instances, the marine risk as well. In cases, in which for any reason, it is more convenient for the government to assume the marine risk, the usual rate for such insurance will be deducted from the charter hire.

Telegraph, Telephone and Cable Matters.

A. E. Holmes has been appointed chief operator, Great North Western Telegraph Co., Winnipeg, vice A. D. Campbell, deceased.

J. O. Pilon, heretofore assistant to local manager, Grand Trunk Pacific Ry. Telegraphs, Edmonton, Alta., has been appointed local manager, there, vice R. M. Macmillan promoted.

Mrs. R. N. Young, wife of the Superintendent of Telegraphs, British Columbia District, C.P.R., sustained a broken leg, through being knocked down by an automobile in Vancouver, at the end of October.

The Association of Railway Telegraph Superintendents held a special meeting at Chicago, Ill., Nov. 22, to discuss various topics in which the members are interested. This meeting took the place of the usual annual convention which it was deemed desirable to postpone indefinitely.

The Great North Western Telegraph Co. has reopened its office at Restigouche, Que., and has closed its offices at Pointe au Pic and Valcartier Camp, Que.; Bath, Camp Borden, Camp Leaside, Paisley and Petawawa Camp, Ont., and Grand Beach, Man. The name of the office at Brockville Jct., Ont., has been changed to Forfar.

A. Mackenzie, Agent, C.P.R. Telegraphs, Guelph, Ont., who retired after 28 years with the company there, on account of ill health, commenced telegraph service in 1872 with the Montreal Telegraph Co. as a messenger, later becoming an operator with the same company and transferring to the C.P.R. Telegraphs in 1889. All his service has been in Guelph.

The Great North Western Telegraph Co. is reported to be employing girls as messengers at Calgary, Alta. It is stated that no girl is employed unless over school age, and their work is confined to the centre of the city, and to the day time. Only a few have been employed so far as an experiment, as it is said that latterly boy messengers have been very inattentive.

Some difference of opinion seems to have arisen as to the payment of war taxes on collect telegrams passing between Canada and the U. S. An enquiry directed to the local agent of the C. P. R. Telegraphs, Montreal, by a press representative brought the statement that when the tax was instituted in the U.S., the company communicated with Washington on the subject, and was informed that the tax on a collect message sent from the U. S. was collected from the sender before the message was dispatched. A representative of the Great North Western Telegraph Co. however stated that the U. S. war tax was being collected from recipients of collect messages and a monthly return made to the U.S. Government and that this course was being adopted on Canadian collect messages sent to the U.S. The Canadian tax is 1c and the U.S. tax is 5c.

R. M. Macmillan, heretofore local manager, Grand Trunk Pacific Ry. Telegraphs, Edmonton, Alta., has been appointed acting Division Superintendent, G.T.P.R. Telegraphs, Winnipeg, and acting Superintendent of Time Service, G.T.P.R vice F. T. Caldwell, who has been granted extended leave of absence on his appointment as a lieutenant in the U.S. Army Signal Corps. He entered the Western Union Telegraph Co.'s service in 1904 as a messenger, at Sydney, N.S., and after learning operating, he worked his way to the position of local manager in the east, and went west in 1911, entering C.P.R. Telegraphs service at Winnipeg. He transferred to the G.T.P.R. Telegraphs service in 1912, as night oprator at Winnipeg, and was appointed local manager at Regina, Sask., when an office was established there. Later he occupied a similar position at Calgary, Alta., and from 1914, at Edmonton, Alta.

Among the Express Companies.

Express companies applied to the Interstate Commerce Commission on Nov. 15 for an increase of 10% in rates. The Adams, American, Southern, and Wells-Fargo companies, making the application in behalf of themselves and other express vompanies, set forth that they had suffered a net loss of $39,848 as the result of incerases in operating expenses and taxes during the first six months of this year.

The various express companies operating in Canada have announced that with a view to improving the working conditions of their employes, and to co-operate in the general movement to conserve the country's resources with respect to time and men, it has been decided to discontinue all pick-up and delivery of express shipments on Sundays, and not to contract to make calls or start deliveries after 5 p.m. on week days.

The Board of Railway Commissioners has extended the express collection and delivery limits for Hamilton, Ont., to include the area in the east end within a continuous line following the west side of Lottridge Inlet, Burlington, Ottawa, Barton, Frederick, Cannon and Ottawa Sts., Roxborough and Kensington Aves., Main St., and Cage Ave.; also Burlington St., from Ottawa St. to and including the Dominion Sheet Metal Co.'s premises. The matter was down for hearing on the application of the City of Hamilton, but the city and the companies, through the Express Traffic Association, had come to an agreement before the hearing, so that it only remained for the board to make an order amending the original order, as arranged between the parties.

The Dominion Ex. Co. was sued recently by Gold Seal Ltd., Calgary, Alta., for refusal to accept shipments of intoxicating liquors for export from Alberta to Saskatchewan and elsewhere, and for refusal to receive shipments in British Columbia, when consigned to plaintiffs' warehouse in Calgary. The express company contended that it is prohibited from doing so under the provisions of the Alberta Liquor Act, and the plaintiffs claimed that the act is ultra vires of the province as being an interference with trade and commerce, which is a matter within the exclusive jurisdiction of the Parliament of Canada. Judgment was given for the plaintiffs, it being stated that the act did not prevent a bona fide business being conducted in the matter of storage within the province for the legitimate supply to points within and without the province.

The Anglo-American Shipping Co., Ltd. the incorporation of which was announced in our last issue, has been formed to carry on the business of building and dealing in steam and other vessels, to act as shipping agents. insurance agents, etc. The officers are: S. Bick, President; G. H. Meehan, Vice President and Managing Director; J. I. Bennett, Treasurer. The office is at 11 St. Sacrament St., Montreal.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Northern Electric Co.—A. Dwight Smith, formerly Manager of the Company's branch at Ottawa, has been appointed Sales Manager, Montreal district.

General Railway Signal Co.—The G.T.R. is installing the A.P.B. automatic block signalling system on its line between Shelburne, N.H. and Bethel, Me. The work is being done by the company's own forces.

Metal Hose and Tubing Co., New York, which is represented in Canada by Lyman Tube and Supply Co., has issued a loose leaf illustrated catalogue of its new hose, "Triplexd," thoroughly explaining its construction.

Theodore Malm, who for the past six years has been electrical and mechanical engineer for various Mackenzie-Mann interests, including Toronto Ry., Toronto Power Co., Toronto Electric Light Co., Toronto & York Radial Ry., Toronto Suburban Ry., London Electric Co., Suburban Construction Co., Canadian Northern Ry., etc., has established two companies, viz., Railway & Power Engineering Corporation, Ltd., and Theo. Malm & Co., with offices at 202 C. P. R. Building, Toronto. Railway & Power Engineering Corporation will deal in railway, light and power equipment, and Theo. Malm & Co. will undertake surveys, plans and estimates for development of electric power, prepare plans, estimates and specifications and supervise work of electric, street and interurban railways and mining electrifications, also complete systems for generation, transmission and distribution of electrical energy for commercial purposes and industrial plants.

The Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont., has placed on the market a new style of outdoor (type d. o. a.) cable terminal which is known as the protected disconnection style. All the copper parts are covered by a porcelain hood, which permits the disconnection of the aerial extension wire even while the circuit is alive. The company states that all its outdoor (type d.o.a.) cable terminals are readily disconnected from the aerial conductor, either by means of a set screw, cap nut or turnbuckle stem. The stem of the new terminal is a modification of the regular cap nut stem and it is claimed that it has some additional advantages where frequent disconnection of the aerial circuit from the terminal is necessary. The new terminal, as well as the complete line of outdoor cable terminals, is fully described in the company's bulletin 700-2.

Refrigerator Heater and Ventilator Car Co., St. Paul, Minn., has received approvals of its Moore heater from the United States Bureau of Explosives and from the Underwriters' Laboratories. The report from the Bureau of Explosives' Chemical Laboratory says:

"A Moore heater car was examined at Newark, N.J., on Sept. 5. The heating system consists essentially of a small iron stove carried in a special compartment underneath the car. The stove is of cast

iron, and has a grate 10 in. in diameter. The fire door of stove works vertically in slots and cannot be jarred open. The compartment containing the stove asbestos is in turn lined with sheet metal. The products of combustion pass directly upward through an iron flue passing through the car floor through the car, and out through the roof, so that the flue gases from the stove do not enter the car. The stove and smoke flue are jacketed with sheet metal, and the space between the flue and jacket is used for warming the air passing into the car. Fresh air from the outside of car enters this space through an opening directly under the stove. Still another metal jacket surrounds the inner jacket. The space between these two jackets produces the air circulation by creating a draft from the air spaces under floor of car. This outer jacket is protected from damage by a heavy metal guard firmly attached to floor and side of car. There is a grating provided which is placed inside the stove at outlet to pipe, so as to prevent any possibility of hot coals doing any damage should the car be overturned. The fuel used in the stove is pea coal. From the construction and design of heating system and from fuel used it is believed that this heating system is not likely to be a source of ignition of car or contents. It is of course not anticipated that inflammable liquids will be shipped in this car when heater is in operation."

The Underwriters' Laboratories put the device to an exacting test. The Engineer of Gases and Oils report shows, in table 1, that they started with a uniform temperature of 11° C. and gradually forced the fire until the air directly above the hot air inlet into car reached 220° C. or 396° F. without danger of igniting the car. These tests were for the purpose of determining the safety of the device from an insurance standpoint. It was not a theoretical determination. It was an actual trial. In table 2 the conditions were much the same as shown in table 1, except the ventilator door was closed. Although the temperature above the hot air inlet to car was forced to 210° C. or 378° F. and the temperature in the heater box about the stove to 180° C. or 324° F., no danger of ignition of car was discovered. Table 3 shows a representative service test. Here again the heat was forced as high as possible, or to 227° C. or 409.6° F., with no resulting danger from fire. Of course, these temperatures do not represent the ordinary temperatures of the heater or air in car during ordinary operations, but they represent the highest temperatures to which the heater can be forced, or which it can at any time or under any conditions attain, and all with the result that it is safe. The size of the car was reduced to magnify or increase the heat effect.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Association for National Defence, W. M. Neal, General Secretary, 263 St. James St., Montreal.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver.—C. E. Blaney, 2337 Third Ave. West, Vancouver, B.C.

Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.

Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

CANADIAN PACIFIC RAILWAY COMPANY.

Dividend Notice.

At a meeting of the Board of Directors held today a dividend of two and one-half per cent. on the Common Stock for the quarter ended 30th September, last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account, was declared payable on 31st December next, to shareholders of record at 1 p.m. on 1st December next.

By order of the Board,
ERNEST ALEXANDER,
Secretary.

Montreal, 12th November, 1917.

MARINE ENGINE ERECTOR:—Wanted for Canadian Shop an experienced foreman to take charge of erecting 1500 H.P. marine engines. Apply Box 1834, Canadian Railway & Marine World.

NOTICE.

The General Railway Signal Company of the United States of America, the owner of the exclusive rights to Canadian patents No. 92323, No. 93127, No. 96256, and No. 97758, issued to Young and Townsend, and covering methods of signalling electrified railways, wishes to call the attention of all possible users of the devices and systems covered by such patents to the facts that it is prepared to sell and furnish, at short notice, all such devices and to install such systems upon any railway in the Dominion of Canada.

All inquiries regarding the above should be addressed to The General Railway Signal Company of Canada, Limited, Lachine, Province of Quebec, Canada.

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Four Second-Hand Locomotives In Good Condition.

One 2-6-0
Cylinder 20x26, Weight on Drivers 109000.

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COMPTROLLER'S OFFICE
Kettle Valley Railway, Penticton, B.C.

GRAND TRUNK RAILWAY SYSTEM

THE
DOUBLE TRACK ROUTE

WINTER TOURS to CALIFORNIA

AND ALL

Pacific Coast Points, Florida, Texas, New Orleans, etc.

Winter Tour Tickets now on sale. Stop over privilege allowed.
Apply to any Agent of the Company for particulars.

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Passenger Traffic Manager,
MONTREAL

W. S. COOKSON,
General Passenger Agent,
MONTREAL

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If you have heavy materials to move, you can move them with Marsh & Henthorn machinery more quickly than with men, and at a lower cost.

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Made complete to your specifications. Write for catalogue, and photos of Steel Cars we have made for other.

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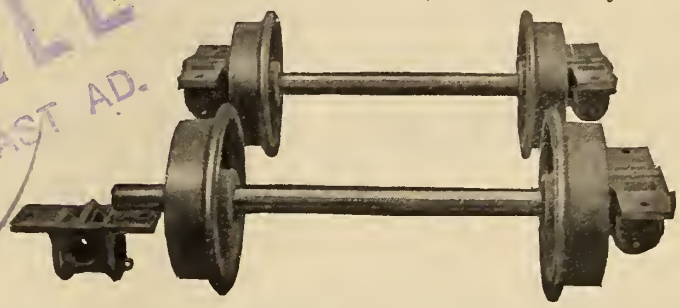
We can supply Chilled Iron Car Wheels with Steel Axles and any style box required for making up your own cars.



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Switchboards for Ship Lighting and Power Distribution

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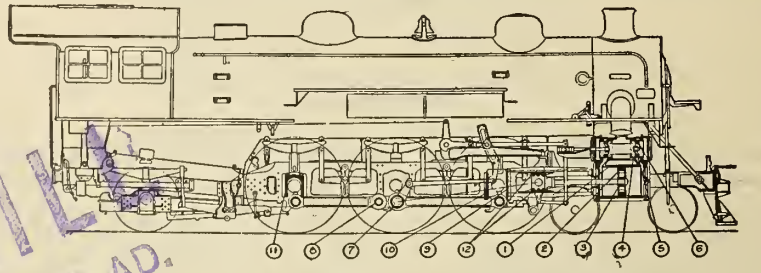

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For 12 of the Principal Parts of a Locomotive

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W. B. LEACH, PRES. AND GEN. MGR. J. G. PLATT, VICE PRES. AND SALES MGR.

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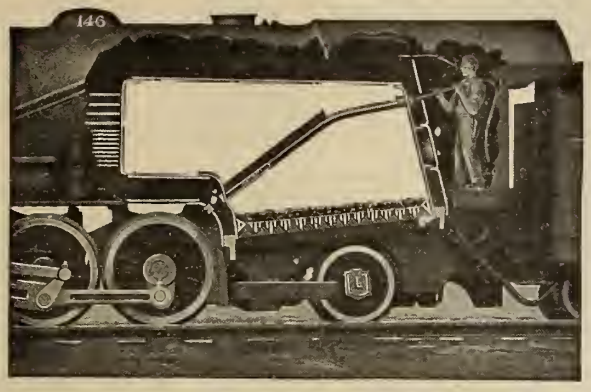
Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

Lagonda Arch Tube Cleaners

Scale forms in the Water Arch Tubes of locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

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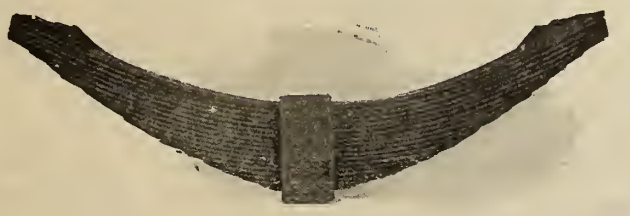

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LOCOMOTIVE, TENDER AND PASSENGER CAR SPRINGS of every description.
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Montreal, Canada

Canadian Government Railways

"That the Canadian Government shall secure without delay the completion of the Intercolonial Railway from Riviere du Loup, through New Brunswick and Truro, Nova Scotia."

Thus read the 68th of the resolutions forming the basis of Confederation.

Intercolonial Railway

Prince Edward Island Ry.

	Mileage
1872 First through train between St. John and Halifax	274
1880 Levis, St. John, Halifax, Mulgrave	1,039
1898 Montreal, St. John, Halifax, The Sydneys	1,526

Passengers Carried	Tons Carried
1877 - - 707,384	1877 - - 449,685
1897 - - 1,633,188	1897 - - 1,348,179
1916 - - 5,859,482	1916 - - 10,352,622

Gross Earnings	Employees
1877 - $1,272,506.00	1877 - - - 4,462
1897 - 3,019,471.00	1897 - - - 5,600
1916 - 21,374,697.00	1916 - - - 19,791

1917

Over 4,000 Miles of Railways

WINNIPEG - COCHRANE
QUEBEC
MONTREAL - ST. JOHN
HALIFAX - THE SYDNEYS
CHARLOTTETOWN

Through Express Trains

Winnipeg	- -	Quebec
Winnipeg	- -	Toronto
Montreal	- -	Halifax
St. John	- -	Halifax
Halifax	- -	Sydney

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MONCTON, N.B.

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Why don't you replace that old antiquated tool with a new up to date

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Large Stock of Standard Structural Material at all Works.

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Our different Air Brake Scholarships give a thorough knowledge of the construction and operation of air-brake systems. They convey complete instruction to The Westinghouse Air Brake and The New York Air Brake, including full treatment of all "diseases" to which these mechanisms are subject, and the manner of making repairs.

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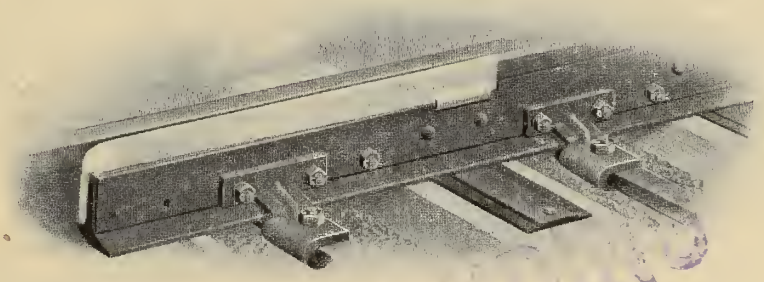

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Note that the Switch Rail is continuous to the end of the Switch, leaving no joint to work loose. This construction in hard service will outwear all rail point five to one.

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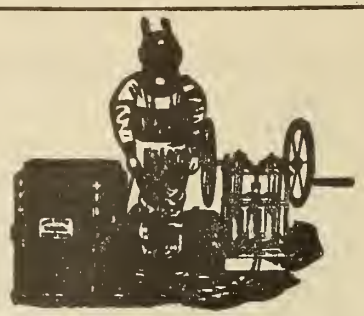
Gen. Man. Western Canada, Toronto.



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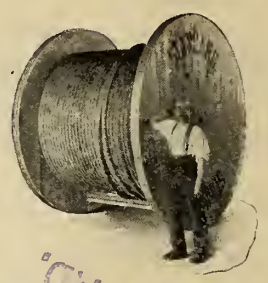

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Notice is hereby given that a dividend of four per cent. on the paid-up capital stock of the Company for the half-year ended Nov. 30th, 1917, has been declared payable Dec. 1st, 1917, to the shareholders on record as of the 30th of Nov., 1917.

H. F. MARRIOTT, Secretary.
Toronto, Nov. 20th, 1917.

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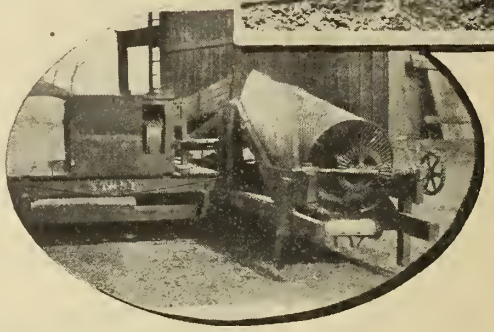
Recently this machine ran TEN HOURS WITHOUT A STOP on four gallons of gasoline. In this time the machine screened, 1700 feet of crushed rock ballast at a total cost of only $17.50. Another gang (working without the machine) only screened 1400 feet at a total cost $67.50 for labor. It cost just $50.00 less to do the same work and 300 feet more with the machine as it cost to do the work by hand.

I don't think I would have done so well without the FAIRMONT engine as I have never seen another engine run for ten hours without a stop.

Yours very truly,
(Signed) G. C. Harris, Sec. Foreman



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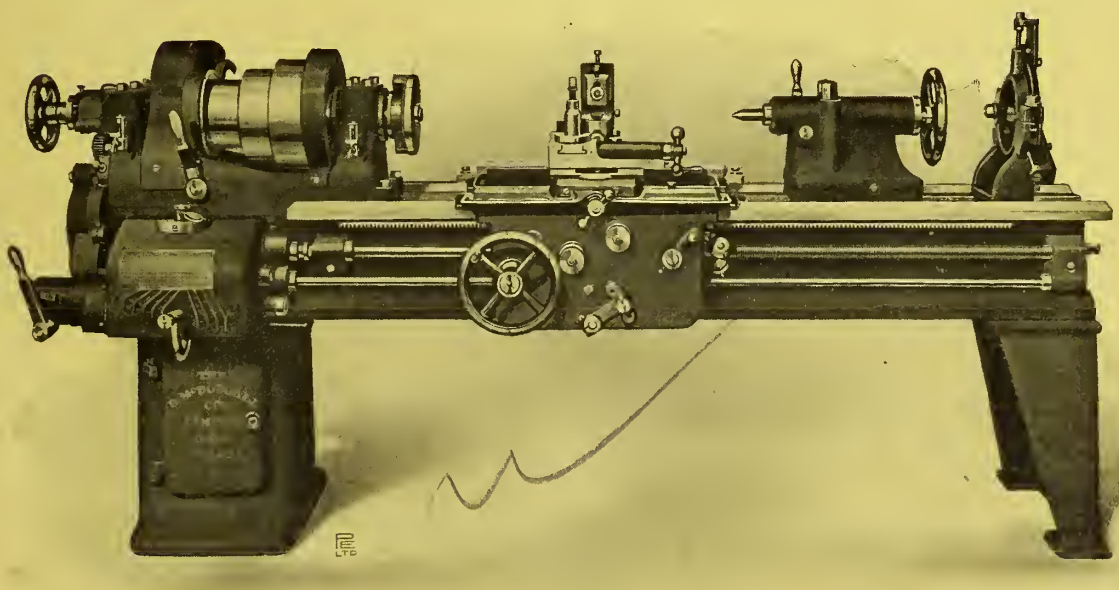

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